



**DAVID  
CLEMENTS  
ECOLOGY LTD**

**Biodiversity Compensation:**

**A Feasibility Study for Neath Port Talbot County  
Borough Council**

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# 1.0 Introduction

## 1.1 *What is Biodiversity and Why is it Important?*

Biodiversity is a term that covers a wide range of species, habitats and the way in which they interact. The Cambridge Dictionary (Cambridge University Press, 2008) defines the term biodiversity as *'The number and types of plants and animals that exist in a particular area or in the world generally, or the problem of protecting this'*. Simply put, biodiversity is the variety of life on Earth.

Biodiversity defines the beauty of many of our landscapes as well as providing us with many of the things that sustain our lives. The natural world provides us with a range of food products, timber, fuel, textiles, medicinal products and fresh water. It regulates our climate, controls floods, pollinates crops and stops erosion. It is also of huge benefit to our health and wellbeing and can have huge economic benefits through recreation and tourism.

It is recognised that biodiversity is under threat and the majority of the scientific community accept that the flora and fauna of the world is decreasing which can have drastic impacts worldwide from food production to the discovery of new medicines.

## 1.2 *Threats to Biodiversity: A UK Perspective?*

The effect of biodiversity decline has been widely discussed within the UK through a number of reports. The most recent report, The State of Nature Report (SoNaR) 2016, brings together data and expertise from a wide range of organisations to demonstrate that 56% of our species have declined in recent years.

Adverse impacts on biodiversity can be caused by a number of factors. One of the most widely encountered impacts within the UK is through development works and the planning process. Biodiversity impacts, assessments and enhancements are well established through the planning process. The biodiversity impacts, compensation and mitigation measures regulated through the Local Planning Authority and the obligations placed upon a council are the focus of this report.

The loss of habitat and effects on wildlife are sometimes unavoidable through development works. Some habitats and species are subject to varying level of statutory and non-statutory protection through legislation; mitigation for losses or effects on such habitats and species are legally required, whilst other habitat losses and species impact require no mitigation or compensation. Regardless of the level of protection afforded to the habitat or species, a biodiversity loss is still being experienced. Whilst the principle of mitigation, compensation and biodiversity enhancement is welcome, it is not always easy to achieve such measures in practice (Newey, 2012; Sustainability Committee, 2011). The practical issues with species and habitat mitigation, compensation and enhancement are discussed in detail further within this document.

Given the current economic climate and drive to provide housing and development works it is highly unlikely that the pressure on our natural habitats and species will reduce. It is hoped that through

the implementation of a more strategic approach to biodiversity across the county borough of Neath Port Talbot development will be able to progress more smoothly and achieve more robust and long term gains for the flora and fauna of the area.

The issue of unavoidable habitat loss through the development process is complex and varies from site to site and with exact development proposals. It should also be noted that development is not the only pressure on our green environment, areas such as farming and recreation activities can also impact flora and fauna. However, impacts through development are encountered more frequently for NPTCBC and as such are the focus of this project.

### *1.3 Mitigation, Compensation and Enhancement*

Newey (2012) provide a useful review of international biodiversity offsetting schemes. The report also looks at offsetting schemes within England using the following definition of offsetting “Offsetting is where the impacts of a development are compensated for by creating a habitat on a separate site (as opposed to mitigation which takes place on site)”. It uses the results of a Freedom of Information request to English Local Authorities to stimulate discussion on the principles of biodiversity off-setting,

Work to achieve a more strategic approach to biodiversity mitigation, compensation and enhancement has already started in England. The principle of biodiversity offsetting provides an option to developers to provide habitat and species mitigation at a location separate to where biodiversity impacts are being experienced. DEFRA and Natural England have worked closely with six Local Authorities in England. The six authorities were used to pilot the DEFRA biodiversity offsetting scheme and the practical implementation through the planning process. The scheme differs from other forms of ecological compensation as it aims to quantify the potential biodiversity losses and required gains. Unfortunately the scheme is not compulsory and relies on developers choosing to take part.

Biodiversity is a multi-faceted issue and as such it is difficult to value with one single measurement. DEFRA designed a metric tool which takes into account a variety of measures to quantify required gains for potential biodiversity losses. The metric tool provides a biodiversity unit of potential losses and required gains.

The work undertaken as part of the DEFRA scheme is innovative and provides very useful information, yet with such schemes some queries can occur. For example the metric tool can seem complex or daunting and whilst a biodiversity unit is an excellent tool it does not provide a cost or details as to how such gains will be implemented. In addition the scheme is not compulsory and relies on developers choosing to take part.

### *1.4 Aims of the Current Project*

Neath Port Talbot County Borough Council (NPTCBC) are exploring potential options for a more strategic and proactive approach to delivering better outcomes for the biodiversity resource of

Neath Port Talbot. Whilst the work on offsetting currently underway within England is recognised, it is felt prudent to review examples of current best practice and how such schemes can be implemented within a Welsh planning policy framework.

This project attempts to explore the potential opportunities and constraints of biodiversity compensation and enhancement schemes. It also outlines the mechanisms through which the practical implementation of such schemes might be delivered.

The current report is split into two parts: Part A discusses the theoretical aspects behind biodiversity compensation, including how it could fit within the Welsh planning system, statutory duties, finances and land availability. Part B is directed at the practical implementation of a compensation scheme in Neath Port Talbot, and identifies a number of candidate sites and explores the potential costs of implementation.

## **2.0 PART A – Biodiversity Compensation and the Planning System**

### **2.1 Introduction**

The time in which it takes the issue of habitat compensation and/or species translocations schemes to be agreed is seen by many as a barrier to development works. Development works can have a wide range of impacts on our society, some of which can be beneficial such as an increase housing stock or job creation. The positive impacts of development can sometimes be seen to outweigh any potential negative impacts such as habitat loss. The need for this project was highlighted through consultation with the NPTCBC Planning Department in order to find a pragmatic way to enable development whilst meeting ecological and wider biodiversity obligations.

The first part of this report seeks to review what mechanisms are available to NPTCBC to help meet their obligations for no net loss of biodiversity. There are a variety of options for a Local Planning Authority to legally require a developer to fund biodiversity compensation, mitigation and enhancement works. The framework currently available for NPTCBC includes the use of section 106 agreements and planning conditions.

A brief overview of the most current statutory protection and obligations to biodiversity is provided below. It is then attempted to explore the options of setting up a biodiversity compensation scheme and a funding mechanism through which to implement the scheme.

A section 106 agreement is generally the most used tool through the planning system to secure long term management agreements for a development and any off site impacts. As such, the use of section 106 agreements as a way in which to secure funding and management for a potential biodiversity compensation site is explored through this document.

Other innovative approaches and ideas are also explored. Given the difficulties that can be experienced with section 106 agreements (see below), the idea of a single pot of money through which biodiversity works could be funded is appealing. A pooled contributions pot would provide NPTCBC or whoever undertakes the scheme with a greater degree of flexibility than the use of a section 106 agreement, which has to be site specific.

Community Infrastructure Levy (CIL) was introduced in the Planning Act 2008. It allows planning authorities in England and Wales to place a charge on developments which will be used as a contribution to funding local community infrastructure needs. Such needs can include biodiversity tasks within a local area. The charge is based on the square metres of any proposed development and as such could be seen to be proportionate to the potential level of impact. NPTCBC do not have any plans at present to adopt CIL into the working practices, however it could be an option for the future. At present, caution is advised with this option as it is not clear what priority biodiversity tasks would be given versus road schemes or play areas. In practice it may be difficult to ring fence CIL funds for biodiversity works.

Whilst in principle discussions on the best funding mechanism and implementation of the biodiversity compensation can be undertaken, there are many issues surrounding the principle which require further advice and clarity. Issues such as land availability, longevity and monitoring or enforcement are explored within this section.

## *2.2 Statutory Background*

There are many pieces of wildlife and habitat legislation which give varying levels of protection to our native flora and fauna. Such legislation is translated into planning policy and places legal obligations on public bodies such as NPTCBC. Some of the more recent and most relevant legislation is discussed below to illustrate the overwhelming policy drive that the Welsh Government has implemented.

The Environment (Wales) Act 2016 place a duty on public authorities to ‘seek to maintain and enhance biodiversity’ so far as it is consistent with the proper exercise of those functions. In so doing, public authorities must also seek to ‘promote the resilience of ecosystems’. Public bodies are required to report on the actions

The State of Natural Resources Report (SoNARR) 2016 provides an assessment of the state and trends of the natural resources found in Wales. It also considers the extent of sustainable management of natural resources. A number of stakeholders across Wales were involved in the process which it is hoped will provide an evidence base for a wide variety of policies which affect natural resources such as the Welsh Government’s National Natural Resource Policy.

The SoNaRR report highlights that many of Wales’ plant and animal species are in decline which is also causing a decline in the diversity of species and habitats found within Wales. Wales also failed to meet its 2010 international and national biodiversity targets.

The Well-being of Future Generations (Wales) Act 2015 aims to secure a good quality of life for future and current generations. The legislation puts a well-being duty on all public bodies to achieve via a number of goals. The sustainable development principle is core to this legislation and looks to improve our economic, social, environmental and cultural well –being. Each year public bodies must publish an annual report showing progress made in meeting their objectives. A healthy environment can have many direct and indirect benefits across a range of the well-being aims of the act such as a diverse economy, improved mental and physical health and preventing climate change.

Wales also has a strong planning policy framework which recognises biodiversity and re enforces the principle of no net biodiversity loss through the planning process. Chapter 5 of Planning Policy Wales (Nov 2016) outlines the Welsh Government’s commitment to biodiversity and what can be achieved through the planning system. Technical Advice Note 5 Nature Conservation and Planning (2009) provides detailed advice to Local Planning Authorities on planning and wildlife, however it is more detailed with respect to protected sites and species.

Neath Port Talbot has transposed the Welsh national planning policy into their local planning guidance. The Local Development Plan (LDP) for Neath Port Talbot details the Council’s approach to the environment and planning. Policies EN 6 and EN 7, detailed within the LDP, provide detailed

guidance on NPTCBC environmental policies and the approach of the planning system. Both policies make clear the requirement for mitigation and compensation requirements where development adversely affects a statutory and non-statutory protected site, habitat, species or natural feature. Policy 1 relates to Infrastructure requirements and states: *“In addition to infrastructure improvements necessary to make a development acceptable in health, safety and amenity terms, additional works or funding may be required to ensure that, where appropriate, the impact of new development is mitigated. These requirements will include consideration of and appropriate provision for: among other things; biodiversity, environmental and conservation interests.”*

### *2.3 Compensation through Section 106 Agreements*

A section 106 agreement is a tool well used through the planning system. A section 106 (s106) agreement is an agreement made under Section 106 of the Town and Country Planning Act 1990 between a developer and the Planning Authority. Where there is a third party land owner, the landowner is also party to and a signatory of the s106 agreement. When used through the planning process, planning permission can be granted subject to the applicant entering into an s106 agreement.

The s106 agreement is a separate legal document and forms a planning obligation linked to the planning permission granted for a development. An s106 agreement covers mitigation and compensation work completed off-site to that where the development is planned.

#### Positive Aspects of a s106 Agreement

- The use of an s106 agreement is the only current legal framework to allow the LPA to bind a developer to biodiversity management works at an off-site compensation site. S106 agreements are well known to planning system and widely used. As such the implementation of such agreements will not be a novel approach and should not cause any additional work for an LPA.
- Advice has been given by the legal department of NPTCBC that numerous s106 agreements can be tied to a single site. Therefore, as long as numerous management aims for a site can be devised and implemented similar to habitat being lost, works on a site can continue in perpetuity.
- The ability to use numerous s106 agreements for a single site will allow developments which have a smaller negative biodiversity loss to contribute to the implementation of compensation schemes which have an overall larger gain than that which is lost through the individual development. This mechanism will help to allow smaller developments to contribute to the delivery of a larger more sustainable biodiversity compensation site.

#### Negative Aspects of a s106 Agreement

- A period of 5 years can lapse between the time planning permission is granted and the time that development works actually commence. Although a s106 agreement is a separate legal document to the planning permission, the agreement will be linked to the development and permission. A s106 agreement may be required to be implemented prior to any development works commencing under a planning permission. However, there can still be a



significant time delay between implementation of the s106 and agreement of the document depending upon when site works commence

- A s106 agreement is required to be site specific. It links a developer and their funding or management requirements to a specific site. Whilst it is accepted that this provides the developer with some transparency and clear obligations, such a process does not provide flexibility on how the money or management is undertaken. It relies heavily on a suitable compensation site being known at the time the s106 is agreed which may not always be the case depending on what type of habitat is being lost.
- The use of s106 agreements can also raise some issues over long-term funding. In some instances it would generally be expected that a developer holds the funds agreed as part of the s106 and releases the funds when work is required or undertaken. However, if a company is sold or becomes bankrupt such funds can be extremely difficult to secure in the long term. Alternatively in some instances a council, such as NPTCBC, would be expected to receive the funds and release them to the land owner rather than hold them in the long term. Again issues may arise in some cases where work is paid for on land in private ownership and the site is sold to another party without adequate funds for long term work.
- A single biodiversity compensation site could have numerous different s106 agreements being agreed for different aspects of ecological work. Each s106 agreement can then start at a different time or year. As such keeping track of which s106 comes into force at what point what work needs to be undertaken for it could become confusing and difficult to track.

## *2.4 Compensation through Pooled Contributions*

The concept of creating a 'pooled fund' of monies to finance the creation and management of a suite of biodiversity compensation sites could be useful. Money generated through the planning process could be held by an agreed organisation and then spent on a suite of ecological works at sites across NPTCBC.

### Positive Aspects of Pooled Contributions

- A pooled fund would allow greater flexibility over how and where money can be spent. The funds could be used on a variety of sites rather than being tied to a single compensation site. Should other suitable sites become available in the future, work could commence on those sites immediately rather than waiting for a development which loses similar habitat to that which can be created.
- If the principles behind habitat banking are considered viable to implement, it could become a standard technique used across the UK. The management and monitoring of the compensation sites is likely to require time and resources. Many LPAs are already struggling with workloads and budget cuts and are unlikely to have the capacity to fully manage the project especially if numerous sites are involved. By creating a pot of pooled contributions a percentage of the pot could, in theory, be used to fund a project officer to oversee the implementation, monitoring and reviewing of the ecological management plans for each site.

### Negative Aspects of Pooled Contributions

- Any money which a Government Body holds and or has some control over how it is spent is considered to be State Aid under British and European legislation. Advice has been sought from Welsh Government advisors on such issues and the scheme has been confirmed by such advisors to qualify as State Aid. Therefore, NPTCBC would be unable to hold the pooled fund created through this funding option.
- To avoid the issue of State Aid a separate organisation could be formed to hold the pooled funds collected through the compensation scheme. However the legal issues surrounding the setting up of a separate organisation to hold the funds are significant. Further guidance from a legal expert who specialises in this area would have to be sought. Although the creation of a pooled fund could be used to fund a project officer, it is likely that the project will take a few years to become well enough established to generate such revenue. It is also considered that a large numbers of sites will be required to create enough money to fund a project officer. Land availability in the long term could potentially be an issue for this project.

## *2.5 Issues Which Affect Both Options*

There are some issues which would affect the project regardless of how it is secured. These issues are discussed below. Each issue has been split into a separate subsection for ease of reference.

### *2.5.1 Fees/Charges*

It appears there are two options that could be explored as part of the funding mechanism for this project:

- **AREA-BASED FEE:** A fee could in theory be charged on all planning applications where a loss of biodiversity is going to be experienced. The fee can be based on the area of habitat to be lost per m<sup>2</sup> which is similar to the charging schedule used as part of the CIL scheme.
- **WORK-BASED FEE:** Alternatively, the actual costing of a variety of habitat enhancement works within a site could be calculated and a developer charged the required amount.

The use of a standard fee based on the size of habitat lost does not reflect the quality of the habitat. Habitats can come in a variety of conditions from poor to excellent and habitat in an excellent condition or takes longer to replace such as woodland is more valuable to wildlife than others.

### *2.5.2 Land Value*

Land across the UK has a different value depending on its location. For the purpose of this document we will be focusing on the value of land for development. To illustrate the point it is generally accepted that a parcel of land located within a rural settlement in Neath Port Talbot has a lower value than the same area of land located within a city such as Cardiff. The profit margins of many forms of development can be lower for land within the Neath Valley perhaps making development less attractive to developers. Developers could argue that the monetary costs of providing payments for biodiversity impacts can make a scheme unviable.

### *2.5.3 Monitoring of Physical Works*

In order to scientifically calculate any potential biodiversity increase or loss within a site, baseline ecological data for the site will be required. Long term repeatable monitoring which is comparable with the ecological baseline data for the site is also required. Monitoring will provide important information to help demonstrate the success of any works and will also be invaluable to inform future works and management within the site. However, the issue of who pays for such monitoring and the level of monitoring required can cause issues.

For example, to monitor any change to grassland species diversity a form of botanical monitoring would be required. There are a variety of techniques available for habitat monitoring from a simple phase 1 survey, common standards monitoring to NVC level habitat surveys. As part of this project it is recommended that NVC habitat monitoring techniques are used to provide rigorous and detailed levels of data. This level of survey effort would be required before and after management works are undertaken and can be considered specialised. Therefore, it is suggested a professional botanist rather than volunteers would be required to undertake such monitoring. Unfortunately, the costs of a professional botanist completing NVC surveys within a site can be more when compared to volunteers. It is suggested that potentially the onus should be on the landowner to provide an adequate level of baseline data, agreed in consultation with the LPA ecologist, for their site to be included within any compensation project. The costs involved with providing adequate baseline could become a barrier to landowners becoming involved

### *2.5.4 Monitoring of Biodiversity Increase or Decrease*

Monitoring of each biodiversity compensation site before and after works are completed will be required in order to demonstrate to interested parties that the biodiversity value of a site has been improved to compensate for similar habitats that have been lost. Scientific data is required to ensure and demonstrate that local authorities and the government are meeting the target of 'no net biodiversity loss'.

It is possible that the long term biodiversity aims, reflected in policy and legislation, could change in the future. Habitats that are currently listed on section 7 and as a priority habitat within the UK and Local Biodiversity Action Plan (BAP) could be removed or have habitats added. This could change the priorities of habitat creation and result in different sites being required.

### *2.5.5 Land Availability*

The provision of a suite of sites which a developer pays towards management works to improve their natural resources is generally referred to as habitat banking. Using larger sites as part of this project could provide a greater local biodiversity impact. However, the creation of a necklace of smaller sites which are well connected would also provide a landscape wide biodiversity

improvement. Whilst the principle of habitat banking is ideally suited to this project, the issue of such land actually being available is still a potential problem.

Like for like compensation can be difficult if lost habitats are not available or suitable conditions are not available to create them in a compensation sites. It would be anticipated that a wide variety of sites will come forward to become part of this project, however this may not be the case. A set amount of land is available within NPTCBC and as such it may not be possible to find a wide number of sites of low ecological value which require improvement. The money which can be made through selling and developing land can be substantial and is likely to be a preferable option to many private land owners. Farmland would seem an ideal resource for this project, however the vast majority of farms are within Glastir, receive Single Farm Payments or other similar subsidies. The aims of the biodiversity compensation project may conflict with those required under a farm subsidy. There may also be issues of double funding and careful auditing of historic funding and management requirements for a farm may be required. These issues would take time and negotiations to resolve making the use of farmland as part of the project, at this stage, less appealing.

Consideration should be given to the potential use of statutory protected sites as part of this project. Sites such as Sites of Special Scientific Interest (SSSIs) would offer long term security that a site would not suffer land management changes, such as development works, thanks to their statutory protection. However, to be notified as a SSSI the site would be expected to have certain features or habitats to be in a good to excellent condition for wildlife. It may be possible to fund some works within a SSSI as long as the features which are improved do not affect any feature for which the site is designated. For example, if a site is designated for its ditch network, perhaps there is some scope to improve hedgerows or grassland within the site boundary. This would require close communication and negotiation with the landowner and NRW. There may also be some scope to use geological SSSIs as the features for which they are notified do not reflect the quality of the surrounding flora or fauna.

Another thread to this project was to look for like for like compensation sites within NPTCBC. It was difficult to find suitable land for use within the project for a variety of reasons, which are outlined above. The project is within a very early stage and without some pertinent questions being answered which are critical for private land owners such as the length of s106 agreements and what legal obligations remain after the agreed period of the s106. A limited number of private landowners were approached for advice and potential participation in this scheme. It is hoped that, if the pilot sites detailed within this report are successful, the principles can be applied to private landowners and long terms queries can be answered.

### *2.5.6 Legal Protection*

It is considered that in order for biodiversity mitigation and compensation to be taken seriously by a developer, it needs to be a statutory requirement. This is discussed in depth within the National Assembly for Wales (2011) inquiry into biodiversity in Wales. At present there is much best practice guidance and advice that biodiversity must be incorporated into development. Some developers do take heed of such guidance and try to incorporate biodiversity as much as possible; especially where it can link to other benefits such as ponds as part of sustainable drainage schemes for example. Unfortunately some developments do not implement best practice guidance as there is no legal

requirement to do so at a statutory level. Planning policy can look to secure compensation but it is reliant on individual council policy and policy application.

A clear and strongly worded legal requirement that any development which results in an overall loss of biodiversity requires like for like compensation would give more weight to the requirement for compensation for habitat loss that is not statutorily protected.

If the project is taken forward it is thought likely that the compensation sites will be required and protected through planning policy. It is hoped that any compensation sites will be protected from future development however there will be no statutory protection for the sites. Land designations through the Local Development Plan (LDP) are open to challenge if enough justification can be given to the potential development. It is recommended that legal protection is given to each biodiversity compensation site to protect them in the long term

### *2.5.7 Like-for-Like Compensation*

As a starting point, NPTCBC look for like for like habitat type compensation for that which is lost on a 1:2 extent through the development process. Dependent on the quality of mitigation proposed for a habitat lost there may be some negotiation over the size of habitat compensation required. This is in essence the process of habitat banking and a cost for the management required to improve the biodiversity of various sites can be provided. Where the habitat to be managed is the same as that being lost, a straight forward cost is needed which one can demonstrate and charge the developer. However, due to a limited amount of habitats available within the compensation sites it may not always be possible to find exact like for like habitats to those being lost. If another habitat, different to that which is being lost, is created there is still an overall loss of a specific habitat type.

There are some habitat types which are considered irreplaceable and, in the opinion of this report, under no circumstance should such habitats be developed. Habitats such as ancient woodland and sand dune are considered fragile ecosystems and extremely difficult, if not impossible, to replace.

### *2.5.8 Longevity of s106 Agreements*

The longevity of the compensation sites being managed for wildlife is also an issue for a variety of reasons. Generally it is agreed that a compensation site (habitat bank) should be managed for as long as possible, ideally in perpetuity. Thus the land would not be used for any other purpose such as development, which could provide a landowner with a substantial monetary pay-out in the future. Depending on the viewpoint of the landowner this can be either a positive or negative factor. For some, it would provide a long term known income and use for the site which they can rely on. This is particularly attractive if the land is outside of the LDP and unlikely to gain permission for any form of development or is unsuitable for intensive farming.

However, if the use of such a site is legally restricted for only the purpose of biodiversity through a lengthy s106 agreement, for example, there would be little other option for the land owner. If development rates slowed down there may not be such a requirement for land to be used for

compensation purposes. Although it would seem highly unlikely that development works would ever cease in the UK, the scenario is still worth considering especially for a landowner who could be left with a plot of land they have no perceived use for. It would make economic sense that the landowner would seek to have a revenue stream for the site if it is possible. This may not always take the form of development; it could be through different farming methods for example. This can be equally as damaging to an ecologically sensitive piece of land. However, as long as a landowner does not negatively affect any works which have been secured through an s106 agreement, there may be an opportunity for the landowner to use remaining parts of the site for other purposes.

The issue of what would happen if a landowner wanted to withdraw their land from the biodiversity compensation scheme needs to be considered. If an active s106 covers the site, the landowner is legally obliged to manage the site in line with the s106 agreement. Clauses can be written into s106 agreements which require a landowner continue to manage a compensation site in a manner which does not negatively affect any work which has been completed on site as part of the compensation project. Although considered unlikely, a s106 agreement could be open to challenge if the landowner experiences a change in circumstances. If a challenge is successful potentially the LPA or a developer could seek to 'clawback' money from a landowner.

If the legal agreements required to secure long term land management with the land owner become a barrier to the project, the option of buying the land could be explored. The land could then be given to a suitable wildlife body or an organisation such as NPTCBC for management.

#### *2.5.9 Monitoring & Enforcement*

Many developers do not understand the ecological benefits of monitoring. Monitoring of any mitigation is required to ensure the proposed scheme has worked and that any habitats and or species have not been negatively affected. Unfortunately ecology is not black and white and many factors can affect the success of mitigation schemes. The more monitoring which is undertaken and shared can only help to improve our knowledge of implementing successful mitigation or compensation strategies.

However, developers can raise a number of valid questions and issues. For example, the developer may place an expectation on the ecologist to know what is going to work and question why they should pay for monitoring which will help improve wider best practice. It should also be considered what length of monitoring is proportionate for each development as the scale of impacts can vary. A developer having a small local impact may challenge an expectation to pay for the same length of monitoring as a development with a regional or national impact.

Monitoring also raises the question of enforcement, enforcement of the work required actually being undertaken and enforcement action being taken if it is not. As any monitoring through the Biodiversity Compensation Scheme is secured through the planning process it is considered that the LPA would need to enforce any non-compliance issues. However, the potential for non-compliance tends to arise years after the development works and or funding for compensation works has been agreed. It can be complicated to work out who the LPA should pursue for any enforcement action as companies can cease trading, merge or be sold. It can also be difficult to work out exactly who

should have undertaken the required management works especially if a developer hires a sub-contractor to carry out such work. There is not always a clear paper trail to follow which shows who was asked to carry out what works and when. It may be seen as more productive if an LPA enforcement officer pursues more straight forward planning breaches.

Long term management and ecological improvement of a site can be effected by a number of different issues such as soil conditions, adverse weather or different management techniques being required to what was originally envisioned. Monitoring could show that, despite ecologists' best efforts, a management plan has failed for any number of reasons which it may not be reasonable to foresee. Once a developer has paid for and implemented a scheme of mitigation it could be difficult to pursue them for further funds if the mitigation fails as they are highly likely to consider their legal obligations met and discharged. It is also worthwhile considering is it within the public interest to spend money pursuing such an issue when it can be perceived that the developer has done everything correctly in the first instance. Although professional ecologists or land managers appreciate the difficulty in designing and implementing land management schemes, the general public or developers could consider any failed schemes down to poor work by the ecologists involved.

#### *2.5.10 Measuring No Net Loss*

It is necessary to measure whether or not the management works proposed at the compensation sites have been successful. It is not enough to simply design the management of the site based on best practice and assume that the works have improved the biodiversity and species diversity of the site. Monitoring is critical to be able to demonstrate to developers and the public that the scheme is working and is a worthwhile use of money. Given the complexity of the natural world it is difficult to have one monitoring approach that fits all sites. Monitoring will need to be site specific and incorporated into any site management plan to ensure it is costed for and implemented.

To ensure that the monitoring work is undertaken to a consistent and comparable standard it is suggested that professionals are employed to undertake technical monitoring rather than volunteers or students. Volunteers can be an exceptional resource with many skilled and enthusiastic individuals; however they are volunteers and may not always be available to undertake repeated surveys visits. Techniques such as invertebrate or NVC level monitoring do require a level of training and experience to complete. Monitoring could potentially be carried out by students however it would rely on supervision by an appropriately experienced supervisor with the time and resources to implement and oversee such a project year after year. This resource may not always be available and in the locale of the compensation sites.

Monitoring also provides a wealth of information for conservationists and ecologists to improve best practice procedures. The Environment (Wales) Act 2016 places a duty on public authorities to maintain and enhance biodiversity and report on their actions in achieving this duty. As these reasons help to demonstrate, monitoring data can also be multi-functional. This project could also help to meet the aims of the Well-Being and Future Generations (Wales) Act 2015. Further demonstrating the importance of the project and monitoring of any works completed.

## **3.0 PART B – Practical Implementation**

### *3.1 Introduction*

This section aims to look into how a biodiversity compensation project could be implemented, specifically within Neath Port Talbot. It looks into the tools currently available to undertake such a project and identifies sites within the County Borough which could potentially be used for the scheme, and what kinds of management would be applicable. The issues involved with the practical implementation are discussed.

### *3.2 Metric Tools*

Whilst the Biodiversity Compensation Project and Biodiversity Offsetting Scheme in England are broadly similar, a key difference is that the compensation project does not make use of a Metric Tool. The benefits of the Metric Tool are recognised as an excellent way to quantify biodiversity losses and gains. However, for the purpose of this project, it is felt a Metric Tool is complex and off putting to the developers and planning officers. A metric tool may also not recognise different local planning policies and the impacts they can have on mitigation or compensation requirements. Within Wales, each Local Authority has a trained and experienced ecologist who assesses potential biodiversity impacts and advises the council accordingly. As such, within Wales the use of a Metric Tool seems a duplication of effort in part between the current roles of a Local Authority ecologist and the outcome of the Metric Tool i.e. assessing potential biodiversity loss or gain. An ecologist will be able to tell the potential biodiversity losses of a development and the required the gains. The presence of a Local Authority ecologist also provides a valuable impartial and professional opinion on the suitability of any proposed compensation scheme as well. A Local Authority ecologist can also asses and consider innovative and or flexible approaches to mitigation measures.

Apart from the provision of a set number of biodiversity units to quantify losses and gains, a Metric Tool seems to provide very little additional information on actual implementation of any potential offsetting or compensation scheme. The work to produce a site management plan, detailed costing's and legal agreements still needs to be undertaken. As such valuable time can be taken working out the biodiversity units and a lot of work can still be required. This can cost a developer time and money and can be seen as a potential barrier to an otherwise viable development.

### *3.3 Habitat Banking*

Given the above, a different approach for the Neath Port Talbot Biodiversity Compensation Project has been initially taken as part of this feasibility study. The project does not make use of a Metric Tool and focuses more on the potential benefits of habitat banking. The study aimed to identify a variety of sites across Neath Port Talbot which currently have poor or low biodiversity value. The



suite of sites were then subject to an extended phase 1 survey to provide baseline data and guide potential future ecological enhancement/management works within the site.

### *3.4 Identification of Potential Compensation Sites*

An aim of this project is to provide a more strategic and fluid approach to biodiversity constraints and opportunities found through the development process within NPTCBC. The first step was to identify a number of potential sites which would benefit from ecological enhancement work. In an ideal scenario such sites would provide habitat connectivity across Neath Port Talbot, linking area of statutory and non-statutory protected sites. However, practically achieving such strategic landscape gains is extremely difficult. It depends heavily on the land availability around and between sites. Much land is within private ownership and or in use for purposes other than biodiversity. For example a landowner with a piece of land proposed for development will want to maximise the potential economic gain available through the land. Unfortunately, many landowners can be hesitant of improving their land for biodiversity as it is seen as a barrier to development.

Other landowners who can see the benefit of sensitive land management are most likely currently managing their land for such a purpose and there is likely limited potential for ecological gain within such sites. That is not to say there is no potential, however this project looks to provide landscape scale improvements where biodiversity gains can be demonstrated rather than small scale improvements. Once the project has been shown to be successful, perhaps sites which are already assessed as being in good condition could be considered, as long as added benefits to such sites can be achieved. Such sites should also be considered for inclusion within the scheme if they contain rare or specialised habitat similar that which could be lost through development.

Farmers were initially identified as potential landowners to take part in this project. However the vast majority of farmers currently participate within Glastir. Glastir is a sustainable land management scheme which offers financial support for land management which benefits the environment. Some of the works covered by Glastir include works to maintain and enhance biodiversity such as hedgerow creation and set-aside. Whilst there could be some scope for the project to work with farmers currently in Glastir, it is likely to involve lengthy negotiations between the project officer, Glastir officer and farmer to ensure the issue of double funding is not experienced. Given the complexity of Glastir funding it is also thought likely that many farmers within Glastir would also be hesitant to take part within the compensation project for fear of jeopardising current funding or incurring fines.

There are farmers within Neath Port Talbot who are not part of Glastir. Again through discussion with local farmers, it was highlighted that these farmers may have received funding from other sources for work within their land. Some funding sources place restrictions on the work they fund for a number of years into the future, which can raise the issue of double funding or clawback of money from the landowner. They may also be very reluctant to be restricted to how they manage their land, which would be a requirement of the project.

The Countryside and Wildlife Department of NPTCBC have a wealth of local landowner contacts, and the council also owns a number of sites across the county. Therefore, rather than identifying

potential sites, screening them and trying to make contact with landowners it was decided to explore contacts already known to NPTCBC. Once the feasibility of the project and details of how the scheme would work are known, other landowners can be approached to take part in the scheme.

Consideration was given to the inclusion of statutory and non-statutory protected sites within the project. Section 28 of the Wildlife and Countryside Act (1981) as amended places an obligation on Natural Resources Wales (NRW) to notify sites such as SSSIs which meet required criteria. The landowners of designated sites are required to manage them to protect the reasons for which they are designated. Such sites are also protected from development works. The protection given to such sites already makes them much less likely to be developed and may encourage landowners to be involved with this scheme. Whilst money produced through the Biodiversity Compensation Scheme could not be used to help with works which another party has a legal obligation to undertake, it could be used to improve a site for other features.

The potential of sites owned by the local Wildlife Trust, the Wildlife Trust of South and West Wales (WTSWW), was also considered. However, in general Wildlife Trusts tend to focus on land that is already in above average ecological value or is potentially threatened by development pressures. As an aim of the project was to find land in poor ecological value which could be improved, it was considered that the majority of sites owned by WTSWW would not be suitable for the initial stages of this project. The Wildlife Trust also receives funding from numerous sources which could present issues of double funding. Although they were not felt suitable for the initial stage of the project, Wildlife Trust sites could have potential for inclusion once the funding mechanisms and detailed implementation is agreed and shown to work.

Given the longevity of the biodiversity compensation project and the legal requirement that would be placed on a land owner through any s106 agreements to implement enhancement works, there is some concern over using land owned and managed by voluntary groups and groups that have limited expertise and resources for management.

### *3.5 Identified Sites*

Five potential sites were identified by the Estates Department and a further two potential sites were identified by the Countryside and Wildlife Department of NPTCBC. The seven sites are:

- Land adjacent to B4282, Bryn, Neath Port Talbot
- Land at Abercregan, Cymmer, Neath Port Talbot
- Land at Brook Terrace, Taigwaith, Neath Port Talbot
- Land at Glyncorrwg, Port Talbot, Neath Port Talbot
- Land at March Hywel, Rhos, Neath Port Talbot
- Recreation Grounds, Pontardawe, Neath Port Talbot
- Ynysderw Park, Pontardawe, Neath Port Talbot

Some of the Community Councils who have recently been active in environmental projects were also approached to take part in scheme. Onllwyn Community Council suggested two potential sites

which may also be suitable for the project. All nine sites were visited and extended phase 1 surveys of seven of the sites were completed in 2016.

### *3.6 Sites Chosen for Management*

Three sites were chosen to have individual Ecological Management Plans (EMPs) designed for them: Recreation Grounds, Pontardawe; March Hywel, Rhos; and Abercregan, Cymmer. The three sites were chosen to take forward as they were assessed as being the most practical and achievable sites to implement an EMP within. The reasons for which the three sites were chosen are detailed below.

#### *3.6.1 Potential Compensation Site 1 – Recreation Grounds Pontardawe*

The recreation grounds at Pontardawe are owned by NPTCBC but are leased to a local sports club. The grounds are well used by local sports clubs and members of the public for recreation purposes. It was decided to take this site forward and design a scheme of potential ecological enhancements that could be achieved for a number of reasons. The recreation grounds are extensive in size and are currently intensively managed meaning large scale ecological enhancements could be achieved within the site. Also, given the proximity of the grounds to the River Tawe any enhancements in proximity to the river could represent improved habitat connectivity. If the scheme could be successfully implemented in a location with such high public use it could present a public relations success for biodiversity.

#### *3.6.2 Potential Compensation Site 2 – March Hywel, Rhos*

This parcel of land is designated as Green Wedge under the LDP as such it is highly unlikely it will be taken forward for development works in the future. Of the seven sites visited as part of this scheme, this site was one of the largest visited. It was felt that a larger scale habitat impact could be achieved through including this site to be taken forward.

#### *3.6.3 Potential Compensation Site 3 – Abercregan, Cymmer*

This parcel of land is designated a Mineral Safeguarding Area but is otherwise outside of any development allocations under the LDP and as such it is highly unlikely to be taken forward for development works in the future. This site has suffered from overgrazing for a number of years which has reduced the ecological diversity. It is considered that immediate and visible improvements to the site could be achieved by implementing more ecologically sensitive management.

### *3.7 Environmental Management Plans*

Appendix 1 contains a copy of each extended phase 1 survey completed at a potential compensation site. Appendix 2 contains three EMPs written for each potential compensation site proposed to be taken forward if agreement is given for the project.

Each EMP follows the same format and is written to give a number of potential options of ecological works to a developer. The developer would ideally be linked to a potential option or number of options that mirrors the habitat that is being lost as part of the development. If the type of habitat being lost is not available within any potential compensation site, the next closest available habitat to create would be chosen. In some circumstances it may be acceptable to create a habitat or undertake a management aim different to the habitat type being lost. However, the need for this approach would have to be demonstrated by the developer and agreed with the NPTCBC ecologists.

Once a developer is linked to one or more ecological works detailed within an EMP, the details of a s106 can be agreed between the developer, landowner and the LPA via any planning consent. The implementation of an s106 agreement is generally linked to when development works within a site commence i.e. when the habitat loss is experienced that requires compensation or mitigation. In general, year 1 of the s106 will be considered the year prior to development works commencing to allow enabling works to be undertaken, for example preparation of a site for a species translocation would need to be undertaken prior to development works commencing.

### *3.8 Discussion of Issues with Practical Implementation*

#### *3.8.1 Land Security*

One concern raised by potential landowners (per comms Emma Brown, NRW and Rob Williams) who may wish to be involved with the project is the length of any s106 agreement they would be entering into and what that means in the long term for the land they own or manage. Ideally, a s106 agreement would secure any biodiversity improvements within the site in perpetuity; however, this can be for a significant amount of time. This raises the question of how this this would be enforced 10 or 20 years in the future. Areas change and land use aims can change. The NPTCBC LDP is set to last until 2026, the next LDP could designate potential compensation sites for development purposes. . However, if an s106 agreement is active on a site it is a constraint to an allocation and it would not be allocated for development purposes. A s106 agreement places legal protection on a site for continued use of the land for biodiversity. If a landowner wishes to sell their site, the s106 agreement and legal obligations need to be transferred to any new site owner.

An additional concern with regards to land security could be the lack of any statutory legal protection for a compensations site. A large amount of work is required to identify potential compensation sites, undertake initial surveys and design and agree management plans for each site. Without any statutory or non-statutory protection for a compensation site, or an active s106 on the site, there is very little to stop a landowner from changing or affecting the habitats within the site found during the initial surveys and on which the management plans are designed. At present no cost is allowed through the scheme to cover these works.

#### *3.8.2 Habitat Compensation Type*

As discussed throughout this document, whatever type of habitat that is lost through development works requires like for like compensation to ensure the overall decline of a specific habitat is halted. However, direct habitat compensation can prove problematic. For example there may not be enough land available to match the extent of the habitat lost or it may not be possible to create such a habitat within the compensation sites availability due to drainage. Although direct like for like compensation must be the starting point of negotiations, a hierarchy of options will need to be available.

### 3.8.3 Section 106 Agreements

It is a standard requirement that any s106 agreement that NPTCBC enters into lasts at least 15 years and includes monitoring and management costs to last for that period. Projecting costs for materials and labour 15 years into the future can be difficult. It is recognised that index linking all costs does go some way to deal with inflation costs. An increase in labour or material costs within a 15 year period cannot be accurately allowed for and there is concern inadequate funding of some works may be available in the later years of the site management

Consideration could be given to the use of a rolling programme of shorter s106 agreements for a compensation site in an effort to try and secure continual long term site management. However after the initial habitat creation works are completed any further funding of management works would not equate to direct habitat creation. Although this option may alleviate the issue of long term funding of works, it could lead to a continued loss of biodiversity and specific habitat types.

At present entering into a minimum 15 year s106 agreement is seen as the most implementable option for this project. Any s106 agreement entered into for a site will have to contain a clause that requires the bare minimum of management in perpetuity. Funding through the compensation project will not be generally be available for management past the initial 15 year period. It is expected that the landowner will undertake any long term management works at their expense. The legal obligations that an s106 places on a site are likely to restrict any different management in the future. This may encourage the landowner to enter into a separate land management agreement for the future management of the site to cover this ongoing requirement.

Some landowners may be resistant to agreeing to long term management of their site without some form of financial income. In order to avoid long term site degradation there may be an option of using contributions from smaller developments, where a biodiversity loss is being experienced, to fund long term management works. This would not result in direct habitat loss compensation but given the overall benefits of ensuring long term biodiversity security some form of exception must be made in these circumstances.

The issue of long term site management for works secured through an s106 agreement must be experienced in other aspects of council work. It is understood that the provision of play equipment or public open spaces are secured through s106 agreements. There is likely to be some form of monetary agreement for the management of the equipment or spaces, however the money for management is unlikely to last too far into the future. At that point, it is thought likely that the council take on the costs for long term management or replacement of damaged play equipment. If the principle of NPTCBC assuming costs associated with the long term management of public open

spaces or play equipment is accepted, perhaps it can also be applied to the long term management of biodiversity compensation sites.

#### *3.8.4 Economic Benefit for Landowners*

By using a site as part of this project, any works within the site which do not benefit biodiversity would most likely be prohibited. In many cases this is likely to restrict potential sources of revenue the landowner may be able to make from the site. The example of grazing can be used to illustrate the point. A landowner could potentially make more money by renting the land to a grazier to graze as they see fit. If the site is part of the Biodiversity Compensation Project it is likely any grazing would be restricted undertaken at a lower stocking density and for shorter period of time which could reduce the amount of revenue produced for a landowner.

If an economic benefit to land management could be secured, it is thought the scheme would be more attractive to landowners and would encourage them to get involved. Within the EMPs written as part of this project a small fee is worked into the project costings. This fee is referred to as a Land Fee and is calculated at 10% of the total management and monitoring works. This land fee would be payable to a landowner for use of their land as part of the biodiversity compensation project. The exact fee will be dependent on the perceived value of the land and although estimation can be given as part of this project, the fee needs to be agreed with the land owner to ensure no loss of income is experienced.

#### *3.8.5 Monitoring*

As highlighted within Part A, monitoring of the compensation sites will be required. In order to demonstrate the improvements achieved within a site, ecological baseline data which is comparable to monitoring data is required. This raises the question of who should pay for baseline monitoring. Generally through the planning process, it would be expected that a developer would pay for the baseline monitoring of a compensation site. However, the aim of this project is to have a suite of potential compensation sites agreed prior to a developer needing to use them. As such there is no identified developer to pay for baseline monitoring or the creation of management plans for sites. Either a landowner or an organisation such as NPTCBC will be required to provide baseline data whilst the EMP is being agreed to ensure the baseline data is relevant to the long term monitoring proposals. However, the cost of this could make landowners reluctant to participate in the scheme.

There are different options as to who could undertake monitoring of the compensation sites once the habitat creation work is implemented or underway. The issue of monitoring includes:

- Monitoring of the overall project to ensure all works are completed as per the s106 agreement is required,
- Ecological monitoring surveys of the works undertaken.

An allowance within the EMPs is made for the cost of monitoring surveys however no costs are included for overall project management. Initially the cost of management could be absorbed by

NPTCBC however as the project progresses this will become more and more of a burden on staff with already full workloads. A project officer to oversee the project will be required at some point. An issue with the use of s106 agreements to fund such a post is the time delay between the s106 agreement being finalised and development commencing, if it does at all. The risk associated with taking on a member of staff with unsure funding of the post could be an issue. This is where the use of a pooled fund approach as a funding mechanism for the scheme would be highly beneficial. The River Mease Project in England which uses payments from developers to fund improvement works within the River Mease SAC and catchment area and provides an example of securing funding for a project officer to oversee the scheme. An alternative option would be to engage the services of an ecologist or consultant on a yearly contract of 10 days, for example, to review what work has been undertaken and ensure it is as agreed within the EMP for the site.

The same issues apply to the ecological monitoring of the project. Appropriately trained staff within NPTCBC could undertake the surveys, creating a revenue source for NPTCBC. If a private landowner sees the obligation to undertake or arrange ecological monitoring as a barrier to being involved in the project, the council could undertake the works on their behalf. Alternatively an ecological consultant could be employed as a sub-contractor to undertake monitoring surveys on behalf of a landowner or NPTCBC.

## 4.0 Overall Project Recommendations

At present the principle of the biodiversity compensation project can be implemented through the use of s106 agreements. However, a number of other options for the practical implementation of such a project could be explored to ensure the use of a s106 is the only option for practical implementation. Some areas of clarification for the use of s106 agreements would also be beneficial to ensure the potential project is implemented in the most efficient way.

The option of creating a pooled fund to finance works through the biodiversity compensation scheme is considered unlikely at present. However, the vote by the UK to leave the European Union in June 2016 could change or remove the issues of state aid. If a council, such as NPTCBC, could hold the developer funds it may make the pooled fund option more viable from a risk based perspective. It is recommended that the idea is re-visited once the impact of the UK leaving the European Union is known.

At this stage of the project there are many unknown issues which are particularly relevant to the long term management or work of a site. It is suggested that initially the implementation of the project would work best on land that is owned by NPTCBC. Once it can be demonstrated that the project works it should then be rolled out to private landowners who wish to be involved. By using NPTCBC owned land the issues surrounding monitoring, enforcement and longevity for example should be easier to impose.

As detailed within the report a cost is allowed for the landowner for use of the land and for the ecological works to be undertaken and monitored. This could be an excellent source of revenue for an organisation such as NPTCBC. The council could be paid for using their own land as part of the project and jobs could be created across departments for the monitoring of the project, implementation of the actual physical works and ecological monitoring in the long term. Secure funding could be agreed for 15 years per s106 agreement giving at least medium term security for funding, if not long term. This is a real opportunity if concerns regarding the liability of land ownership could be overcome.

Companies such as the Land Trust and the Environment Bank are examples of established organisations which can help with the principles and implementation of sustainable land management. The Environment Bank acts as an impartial advisor to biodiversity offsetting schemes matching potential receptor sites to the potential negative impacts of a development through the planning process. They also offer advice, systems and training on how to implement and secure biodiversity offsetting schemes. The Land Trust is a land management charity that sustainably manages land in the long term on behalf of a wide range of clients. It is recommended that consultation is undertaken with such companies as they may be able to offer help on some of the issues highlighted in the above sections.

In no particular order, questions that remain outstanding and areas that could use further advice or detailed below:



1. Clear and strongly worded legislation on biodiversity and no net loss would give clarity to developers, LPAs and ecologists as to exactly what is required. Legal protection would make the development of biodiversity compensation sites unlikely and prevent the continual movement of habitats. Consultation with the Welsh Government is required.
2. Legal advice or a legal opinion on the requirements and potential implications of setting up a pooled fund for the biodiversity compensation scheme.
3. The adoption of the biodiversity compensation sites into planning policy to provide some level of protection to the sites from development works. The principle of biodiversity compensation can be included within a LPAs supplementary planning guidance (SPG).
4. Legal advice or a legal opinion regarding the implications of any breach of the work agreed under an s106 agreement. Advice on issues such as what enforcement action the LPA would take.
5. The provision of a Biodiversity Compensation Project Officer using funding from the project requires further legal advice. If a project officer cannot be secured for the project, the pressures the project would put upon the Countryside and Wildlife Team within NPTCBC must be fully considered. Further funding for the team is likely to be required and this will need to be agreed with Senior Management staff in NPTCBC.
6. Specialist advice is required on the proposed Land Fee to be charged as part of this project. Advice as to whether the proposed 10% cost is proportionate and achievable is required. Specialist advice will also give weight tot any discussions with landowners who may dispute the figure and its relevance to the project.
7. Agreement on the level of ecological baseline data and long term ecological monitoring is required.
8. Agreement on the use of NPTCBC owned land and or the option for NPTCBC to buy land to be used as part of this project. This will require further internal discussion for NPTCBC
9. Discussion with the Planning Department of NPTCBC on the long term funding of management works and maintenance of Public Open Space and play equipment. Clarification of who pays for the long term works could help resolve issues for the long term management of biodiversity compensations sites.

## 5.0 – Process Summary

As discussed in sub section 3.8.2 like for like habitat compensation is not anticipated as always being possible. The below Habitat Compensation Hierachy is proposed to help justify and decide which habitat type should be used as compensation if direct habitat compensation is not possible.

- 1) Direct like for like habitat replacement of whichever habitat type is being lost,



*If not available,*

- 2) Habitat replacement to be as close as possible variation of habitat type which is being lost. Same overall habitat type, for example grassland but a different type of grassland,



*If not available,*

- 3) If option 2 is not possible, another section 7 or Local Biodiversity Action Plan (LBAP) habitat should be chosen,



*If not available,*

- 4) If option 3 is not possible then a habitat should be created which benefits a section 7 or LBAP species

Based on the current understanding of funding mechanisms available for use as part of this project, it is suggested that if the biodiversity compensation project is taken forward the use of a s106 agreement to secure habitat creation is used. The creation of a pooled pot of money requires further legal advice. It is envisioned that the project would be implemented as follows:

1) A potential biodiversity compensation site is highlighted to NPTCBC. Sites are found through local contacts or through advertising their requirement. A site visit is conducted to ensure the site is suitable for inclusion within the project. For example the site will need to be of low ecological value.



2) Baseline ecological data is gathered from the potential biodiversity compensation site. An Environmental Management Plan (EMP) is designed and agreed. It is anticipated that NPTCBC staff will undertake the initial site assessment work and design the EMP.



3) A development which will experience an overall habitat type loss, which is not subject to statutory protection, is highlighted through the planning process. Discussions between developer, developer agents, NPTCBC planning officers and ecologists are undertaken.

Mitigation hierarchy must be applied to the development to reduce potential mitigation impacts. It must be clearly demonstrated by the developer why mitigation cannot be achieved within the development site



4) The exact type of habitat loss and the extent of which the habitat to be lost is demonstrated by the developer. Potential compensation for such a loss is then agreed with NPTCBC planning officers and ecologists. Habitat compensation on a 1:2 basis is required in the first instance.



5) Dependent on the cost of recreating the habitat being lost and the availability of such habitat to be created, the developer is matched by NPTCBC ecologist to one or more management aims within an EMP for a biodiversity compensation site. If direct habitat compensation cannot be achieved, the habitat compensation hierarchy detailed in section 4.1 will be used to agree a habitat.



6) Once a compensation site and habitat type is agreed, negotiation and agreement of the s106 agreement is to be undertaken. Once the s106 is agreed and all other matters relevant to the planning application are agreed, planning permission may be granted. The s106 agreement will be a condition of any planning consent granted.

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**APPENDIX 1      Extended Phase 1 Habitat Survey Reports**

**DAVID CLEMENTS ECOLOGY LTD**


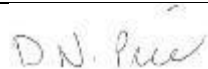
**BIODIVERSITY COMPENSATIONS SITES PROJECT**

**ECOLOGICAL ASSESSMENT: LAND ADJACENT TO B4282, BRYN,  
NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd  
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH  
Tel: 029 20 350120 Fax: 029 20 711997  
[info@dce.org.uk](mailto:info@dce.org.uk)**

**Author:**

Aislinn Harris BSc (Hons) ACIEEM		07.02.17
Dr Neil Price BSc (Hons) MSc PhD MCIEEM		23.01.17
<b>Version No./Stage</b>	V1.0	



## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Borough Council (NPTCBC). It sets out the results of an Extended Phase 1 Habitat survey of a parcel of land adjacent to the B4282, Bryn.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the west of the village of Bryn, Port Talbot at NGR SS 81104 92172. The site measures approximately 0.37ha. The site consists of bracken, bramble scrub, tall ruderal and neutral grassland. The site is roughly triangular in site and relatively flat but with a short slope to the southern end of the site.
- 1.3 A small amount of housing is situated to the east of the site with the B4282 running along the southern end of the site. Grazed fields are present to the north and west of the site. The wider landscape is rural in nature with upland fields and woodland areas such as Margam Forest to the south.
- 1.4 NPTCBC are exploring different options to help effectively deal with ecology and biodiversity issues within the council's planning system. At present, some planning applications are having difficulty in dealing with potential biodiversity losses within the site footprint whilst achieving a viable development. Such issues tend to arise on sites where habitats have non-statutory protection and where non-European protected species are encountered. Whilst the default position of the council is that biodiversity issues are dealt with within the site footprint, some issues cannot always be accommodated. Problems then arise when developers need to find suitable off site locations to use as mitigation for any potential biodiversity impacts.
- 1.5 The Biodiversity Compensation Sites Project aims to identify, survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to benefit and enhance biodiversity. The sites would be used as mitigation for biodiversity losses experienced through the planning system.
- 1.6 The remainder of this report sets out the results of an ecological survey and assessment of the site, which was put forward by NPTCBC as a potentially suitable site for enhancement works.

### 1.7 Designated Sites of Biodiversity Interest

#### *Statutory Sites*

- 1.7.1 There are no statutory sites of nature conservation interest within 1km of the proposed development site.

#### *Non-statutory Sites*

- 1.7.2 'Sites of Importance for Nature Conservation' (SINC) are one of a class of non-statutory nature conservation designations which are recognised throughout the UK

under a wide range of titles, but which are collectively referred to as ‘Wildlife Sites’. Wildlife Sites are so-called ‘third tier’ sites, generally ranked below sites which are of international or national biodiversity significance, but which are considered to have substantive nature conservation value in the sub-national (ie regional or district) context. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a material planning consideration in the relevant statutory development plan. The framework for the identification and designation of ‘Wildlife Sites’ is set out in various Government documents, and is referred to in *Planning Policy Wales* (2017, 9th Edition) and *Technical Advice Note 5: Nature Conservation & Planning* (2009).

- 1.7.3 There are various SINC sites within 1km of the site. All suitable watercourses within NPTCBC are designated as SINC sites and there appear to be numerous between 100m and 1km of the site. Ancient Woodland SINC sites are also present to the south of the site approximately 150m away.
- 1.7.4 There are two candidate SINC sites approximately 500m to the east of the site.

## 2.0 APPROACH AND METHODS

### 2.1 Survey Methodology

- 2.1.1 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and warm, and was subject to an extended phase 1 habitat survey/preliminary ecological appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the phase 1 vegetation classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats, which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest.
- 2.1.2 The methodology also requires the recording of conspicuous fauna species such as birds, herptiles (ie amphibians and reptiles), mammals and invertebrates such as butterflies and dragonflies, paying particular attention to the presence (or possible presence) of any rare or protected species.
- 2.1.3 Where appropriate, the habitats of the site were also characterised against the descriptions provided by the National Vegetation Classification (NVC) as set out by Rodwell (1991 *et seq*).

#### Survey Constraints

- 2.1.4 There were no constraints to this survey. The site visit was undertaken at an optimal time of year for botanical surveys and all areas of the site were fully accessible.

### 2.2 Data Trawl

- 2.2.1 In addition to the original survey, a data trawl was carried out using Neath Port Talbot County Council ecological records.

### 3.0 SURVEY RESULTS

#### 3.1 Habitats & Vegetation

3.1.1 The results of the vegetation and habitats survey are shown on Plan 1 of this report, and are described briefly below.

##### *Notable Plant Species*

3.1.2 No nationally rare or scarce species are recorded from the site.

##### *Notable Habitats*

3.1.3 Based on the current assessment none of the habitats within the site qualify as SINC habitats and or as 'Priority Habitats' of the UK Biodiversity Action Plan (UK BAP) or its Welsh equivalent (WBP, 2016).

##### *Tall Ruderal*

3.1.4 Narrow areas of tall ruderal vegetation exist where the grassland areas are progressing into scrub or becoming dominated by bracken. Species such as false oat-grass (*Arrhenatherum elatius*), rosebay willowherb (*Chamerion angustifolium*), field horsetail (*Equisetum arvense*), ragwort (*Senecio jacobaea*), hemp agrimony (*Eupatorium cannabinum*), compact rush (*Juncus conglomeratus*), nettle (*Urtica dioica*) and creeping thistle (*Cirsium arvense*).

##### *Scrub*

3.1.5 An area of bramble (*Rubus fruticosus agg*) dominated scrub is present to the southern end of the site. Bracken (*Pteridium aquilinum*) is also present within the bramble. Both bracken and bramble are being to spread northwards and as starting to encroach on all other habitats on site. A small area of cotoneaster (*Cotoneaster sp*) is present within the scrub to the east of the site as well.

3.1.6 A few scattered sapling ash (*Fraxinus excelsior*) trees are scattered across the site.

##### *Planted Trees*

3.1.7 Five young non-native trees have been planted along the eastern boundary of the site directly behind the adjacent housing.

##### *Neutral Grassland*

3.1.8 Species such as false oat-grass, meadow fox tail (*Alopecurus pratensis*), cock's-foot (*Dactylis glomerata*), sweet vernal grass (*Anthoxanthum odoratum*), creeping soft grass (*Holcus mollis*), field horsetail, creeping buttercup (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*) and curled dock (*Rumex crispus*) were noted within the sward. The dominant species observed are field horsetail and curled dock with bramble starting to grow through the sward.

##### **Bracken**

3.1.9 The northern end of the site is dominated by bracken with very little understorey present. Dead bracken leaves and dense foliage shade out the ground preventing a diverse understorey developing.

### 3.2 **Fauna**

3.2.1 A broad assessment for the potential for protected species to be present was undertaken during the site visit. Based on the local species records and types of habitat found within the site boundary the site was assessed as having the potential for the following species:

- Nesting birds within the dense bramble scrub.
- A small number of common bat species could use the site for foraging purposes.

3.2.2 It was also felt that the site has the potential for the following unprotected species:

- A range of common and ubiquitous invertebrate species.
- A small number of common synanthropic species such as hedgehog, house mouse, voles and shrews for foraging and potentially nesting.

## 4.0 RECOMMENDATIONS

4.1 The recommendations made within this section are a series of measures that can be implemented to improve the biodiversity of the site. If this site is taken forward as part of the Biodiversity Compensation Sites Project, a full management plan for the site will be required.

### Statutory Requirements

4.2 Nearly all species of bird are protected against killing or injury as individuals under UK legislation, and this protection extends to their nests, eggs and young. A number of especially rare species are subject to enhanced protection under UK law by virtue of their listing on Schedule 1 of the Wildlife & Countryside Act 1981, and may not be disturbed whilst nesting.

4.3 All work to remove the trees and scrub should be completed outside of the bird nesting period which is approximately March to August inclusive. Alternatively, any works which must necessarily be carried out during this period should be preceded by a survey to ensure that no nesting birds are present. This restriction also applies to any other habitats which are found to support nesting birds, including ground-nesting. Clearance and construction works must not cause disturbance or harm to any birds which are nesting in the affected habitats at the time.

### Biodiversity Enhancement Measures

#### *Habitat*

4.4 The bracken within the site boundary will need to be treated and eradicated from the site. This can be achieved through a number of measures, however it should be noted that bracken can take a number of years to control or eradicate from a site. Total eradication may not always be possible from a site. Bracken control measures can be implemented such as:

- Hand spraying of the bracken using a suitable chemical treatment. Hand spraying would be a preferred method due to the relatively small area of bracken to be treated and the proximity of grazing animals. Hand spraying would allow a more targeted application of the chemical treatment.
- Mechanical methods such as cutting twice a year or rolling early in the summer can also be used. These methods benefit from being used in conjunction with spray treatment of bracken.

4.5 The bramble scrub within the site boundary will need to be managed and reduced in extent. Bramble can provide bird nesting habitat and it is suggested instead of complete eradication it is confined to a strip along the southern boundary.

4.6 All post and wire fences which form the site boundaries will be removed and replaced with native species hedgerows. If grazing by stock is to be implemented within the site, it is suggested the newly planted hedgerows are fenced to help protect the growing hedge and allow an understory to establish.

- 4.7 The floral diversity within the site could be improved through on going site management. It is suggested that the site is either subjected to a long term grazing or cutting regime. This will prevent the spread of bramble and bracken across the site once it has been cleared.

*Species*

- 4.8 The creation of a reptile hibernaculum within the site would provide suitable undisturbed hibernation location for any local reptile populations. Although it is thought unlikely that any reptile populations exist within the site at present, habitat clearance work and the provision of a hibernacula could enhance the site and encourage colonisation.
- 4.9 The provision of at least two log piles within the site, ideally close to taller vegetation such as any areas of retained bramble, could potentially provide suitable habitat for nesting hedgehogs and or other small mammal species.
- 4.10 Decomposing wood is also a good food source for a variety of insects and fungi amongst other species. These can then in turn become a food source for small mammals and birds, further enriching the site for local wildlife.

## 7.0 REFERENCES

**Bat Conservation Trust (BCT 2016)** *Bat Surveys – Good Practice Guidelines* (3<sup>rd</sup> Edition). Bat Conservation Trust, London.

**CIEEM (2013)** *Guidelines for Preliminary Ecological Appraisal*

**Edgar, P, Foster, J & Baker, J (2010)** *Reptile Habitat Management Handbook*. Natural England/Amphibian & Reptile Conservation Trust, Bournemouth.

**Institute of Environmental Assessment (IEA 1995)** *Guidelines for Baseline Ecological Assessment*. IEA Lincoln.

**Nature Conservancy Council (NCC 1989)** *Guidelines for the Selection of Biological SSSIs*. NCC Peterborough.

**Nature Conservancy Council (NCC 1990)** *Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit*. NCC Peterborough.

**Rodwell, J (Ed) (1991-2000)** *British Plant Communities*. Vols 1-5. Cambridge University Press.

**Wales Biodiversity Partnership (WBP 2016)** *Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government.

**Froglife (1999)** *Reptile Survey : an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*



**APPENDIX 1: SPECIES RECORDED**

All species recorded by DCE 2016, unless otherwise indicated:

Species	Common Name	Indicator Species					
		W	NG	CG	AG	MG	PIL
<b>Trees &amp; Shrubs</b>							
<i>Cotoneaster</i> sp	garden cotoneaster						
<i>Fraxinus excelsior</i>	ash						
<i>Rubus fruticosus</i> agg	bramble						
<b>Herbaceous Plants</b>							
<i>Achillea millefolium</i>	yarrow						
<i>Agrostis capillaris</i>	common bent						
<i>Alopecurus pratensis</i>	meadow foxtail						
<i>Anthoxanthum odoratum</i>	sweet vernal-grass						
<i>Arrhenatherum elatius</i>	false oat-grass						
<i>Calystegia sepium</i>	hedge bindweed						
<i>Chamerion angustifolium</i>	rosebay willowherb						
<i>Cirsium arvense</i>	creeping thistle						
<i>Cirsium palustre</i>	marsh thistle						
<i>Crocoshia</i> sp	montbretia						
<i>Dactylis glomerata</i>	cock's-foot						
<i>Digitalis purpurea</i>	foxglove						
<i>Epilobium parviflorum</i>	hoary willowherb						
<i>Equisetum arvense</i>	field horsetail						
<i>Eupatorium cannabinum</i>	hemp agrimony					MG	
<i>Festuca ovina</i>	sheep's fescue			CG	AG		PIL
<i>Galium aparine</i>	cleavers						
<i>Geranium dissectum</i>	cut-leaved crane's bill						
<i>Geranium sanguineum</i>	bloody crane's-bill						
<i>Holcus lanatus</i>	yorkshire fog						
<i>Holcus mollis</i>	creeping soft-grass						
<i>Impatiens glandulifera</i>	himalayan balsam						
<i>Juncus conglomeratus</i>	compact rush					MG	
<i>Lathyrus pratensis</i>	meadow vetchling		NG				
<i>Lotus pedunculatus</i>	greater bird's-foot-trefoil					MG	
<i>Plantago lanceolata</i>	ribwort plantain						
<i>Poa trivialis</i>	rough meadow-grass						
<i>Potentilla anserina</i>	silverweed				AG		
<i>Potentilla erecta</i>	tormentil		NG		AG	MG	
<i>Pteridium aquilinum</i>	bracken						
<i>Ranunculus acris</i>	meadow buttercup						
<i>Ranunculus repens</i>	creeping buttercup						
<i>Rumex acetosa</i>	common sorrel						PIL
<i>Rumex crispus</i>	curled dock						
<i>Senecio jacobaea</i>	common ragwort						
<i>Stellaria graminea</i>	lesser stitchwort		NG				
<i>Urtica dioica</i>	common nettle						
<b>WBP (2008) Totals</b>			3	1	3	4	2

**Key**

PS - Regionally Scarce - Primary Species in SWWSP (2004)  
 CS - Regionally Uncommon - Contributory Species in SWWSP (2004)

**Indicator Species (SWWSP 2004)**

W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG – Acid Grassland, PMG Purple Moor Grass and Rush Pasture, PIL – Post Industrial Land, TF Species-rich Tillage Fields and Margins

**SINC Selection**

Sites which support 1 primary species or 5 contributory species or habitats which support 8 neutral grassland, 8 calcareous grassland, 7 acid grassland, 12 Purple Moor Grass and Rush Pasture or 8 tillage field and margins indicator species should be considered for selection as a SINC. Post Industrial sites which support 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should also be considered for selection.

**PHOTOGRAPHS OF THE SITE – June 2016**



Tall ruderal habitat on site



Dense bracken to north of site



View of neutral grassland



Bramble/bracken scrub



View of site looking north



View of site looking south




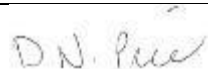
**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**

**ECOLOGICAL ASSESSMENT: LAND AT ABERCREGAN, CYMMER,  
NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd  
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH  
Tel: 029 20 350120 Fax: 029 20 711997  
[info@dce.org.uk](mailto:info@dce.org.uk)**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		07.02.17
	Dr Neil Price BSc		07.02.17
<b>Version No./Stage</b>	V1.0		

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Borough Council (NPTCBC). It sets out the results of an Extended Phase 1 Habitat survey of a parcel of land at Abercregan, Cymmer.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the south of the settlement of Abercregan, Port Talbot at NGR SS 84870 96519. The site measures approximately 0.45ha. The site consists of bracken, acid grassland and a tree line along the north and eastern site boundary. The site is roughly oval in shape and relatively flat but with a short slope along the northern boundary of the site.
- 1.3 A small amount of housing is situated to the north of the site with the Afan Valley Cycle Way running along the northern boundary. A small amount of broadleaved woodland is present immediately to the east, west and south of the site. A small stream is visible down a steep bank to the east of the site. The wider landscape is rural in nature with hills, fields and woodland in the area.
- 1.4 NPTCBC are exploring different options to help effectively deal with ecology and biodiversity issues within the council's planning system. At present, some planning applications are having difficulty in dealing with potential biodiversity losses within the site footprint whilst achieving a viable development. Such issues tend to arise on sites where habitats have non-statutory protection and where non-European protected species are encountered. Whilst the default position of the council is that biodiversity issues are dealt with within the site footprint, some issues cannot always be accommodated. Problems then arise when developers need to find suitable off site locations to use as mitigation for any potential biodiversity impacts.
- 1.5 The Biodiversity Compensation Sites Project aims to identify, survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to benefit and enhance biodiversity. The sites would be used as mitigation for biodiversity losses experienced through the planning system.
- 1.6 The remainder of this report sets out the results of an ecological survey and assessment of the site, which was put forward by NPTCBC as a potentially suitable site for enhancement works.

### 1.7 Designated Sites of Biodiversity Interest

#### *Statutory Sites*

- 1.7.1 There are no statutory sites of nature conservation interest within 1km of the proposed development site.

*Non-statutory Sites*

- 1.7.2 ‘Sites of Importance for Nature Conservation’ (SINC) are one of a class of non-statutory nature conservation designations which are recognised throughout the UK under a wide range of titles, but which are collectively referred to as ‘Wildlife Sites’. Wildlife Sites are so-called ‘third tier’ sites, generally ranked below sites which are of international or national biodiversity significance, but which are considered to have substantive nature conservation value in the sub-national (ie regional or district) context. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a material planning consideration in the relevant statutory development plan. The framework for the identification and designation of ‘Wildlife Sites’ is set out in various Government documents, and is referred to in Planning Policy Wales (2017, 9th Edition) and Technical Advice Note 5: Nature Conservation & Planning (2009).
- 1.7.3 There are various SINC sites within 1km of the site. All suitable watercourses within NPTCBC are designated as SINC sites. A small stream flows along the eastern site boundary where it meets the River Afan approximately 100m to the south, both watercourses are designated SINC sites. There are other numerous watercourse SINC sites within 1km of the site.
- 1.7.4 An Ancient Woodland SINC site is present to the south of the site directly adjacent to the site. Additional Ancient Woodland SINC sites are present within 1km of the site, mainly along the River Afan.



## 2.0 APPROACH AND METHODS

### 2.1 Survey Methodology

- 2.1.1 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and warm, and was subject to an extended phase 1 habitat survey/preliminary ecological appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the phase 1 vegetation classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats, which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest.
- 2.1.2 The methodology also requires the recording of conspicuous fauna species such as birds, herptiles (ie amphibians and reptiles), mammals and invertebrates such as butterflies and dragonflies, paying particular attention to the presence (or possible presence) of any rare or protected species.
- 2.1.3 Where appropriate, the habitats of the site were also characterised against the descriptions provided by the National Vegetation Classification (NVC) as set out by Rodwell (1991 *et seq*).

#### Survey Constraints

- 2.1.4 There were no constraints to this survey. The site visit was undertaken at an optimal time of year for botanical surveys and all areas of the site were fully accessible.

### 2.2 Data Trawl

- 2.2.1 In addition to the original survey, a data trawl was carried out using Neath Port Talbot County Council ecological records.

### 3.0 SURVEY RESULTS

#### 3.1 Habitats & Vegetation

3.1.1 The results of the vegetation and habitats survey are shown on Plan 1 of this report, and are described briefly below.

##### *Notable Plant Species*

3.1.2 No nationally rare or scarce species are recorded from the site.

##### *Notable Habitats*

3.1.3 Based on the current assessment none of the habitats within the site qualify as SINC habitats and or as 'Priority Habitats' of the UK Biodiversity Action Plan (UK BAP) or its Welsh equivalent (WBP, 2016).

##### *Tree Line*

3.1.4 A tree line exists just outside of the site, along the northern and eastern boundaries. Species such as sycamore (*Acer pseudoplatanus*), field maple (*Acer campestre*), hawthorn (*Crataegus monogyna*), ash (*Fraxinus excelsior*), pedunculate oak (*Quercus robur*), hazel (*Corylus avellana*), a species of conifer tree and a species of willow (*Salix sp*) are present. Although the trees are just outside the site boundary, the canopy overhangs the site and it is likely that the tree roots extend into the field.

##### *Acid Grassland*

3.1.5 The field was well grazed at the time of the survey making detailed species identification difficult. Species such as sheep's sorrel (*Rumex acetosella*), heath bedstraw (*Galium saxatile*), tormentil (*Potentilla erecta*), mouse-eared hawkweed (*Pilosella officinarum*), sheep's fescue (*Festuca ovina*), toad rush (*Juncus bufonius*), creeping buttercup (*Ranunculus repens*), sweet vernal grass (*Anthoxanthum odoratum*), rough meadow grass (*Poa trivialis*) and heath speedwell (*Veronica officinalis*) were noted. The western half of the field had a lower species diversity than the eastern half.

##### **Bracken**

3.1.6 Dense stands of bracken (*Pteridium aquilinum*) are present along the southern boundary of the site and along the bank present to north of the site. Himalayan balsam (*Impatiens glandulifera*) is visible within the bracken to the south of the site.

#### 3.2 Fauna

3.2.1 A broad assessment for the potential for protected species to be present was undertaken during the site visit. Based on the local species records and types of habitat found within the site boundary it was felt the below species could be present within the site:

- Nesting birds within the tree line along the northern and eastern site boundary.
- A small number of common bat species could use the site for foraging purposes.

3.2.2 It was also felt that the site has the potential for the following unprotected species:

- A range of common and ubiquitous invertebrate species.
- A small number of common synanthropic species such as hedgehog, house mouse, voles and shrews for foraging and potentially nesting.

## 4.0 RECOMMENDATIONS

4.1 The site is unlikely to be brought forward for development for the foreseeable future as it is designated a Mineral Safeguarding Area under the Local Development. The recommendations made within this section are a series of measures that can be implemented to improve the biodiversity of the site. If this site is taken forward as part of the Biodiversity Compensation Sites Project a full management plan for the site will be required.

### Statutory Requirements

4.2 Nearly all species of bird are protected against killing or injury as individuals under UK legislation, and this protection extends to their nests, eggs and young. A number of especially rare species are subject to enhanced protection under UK law by virtue of their listing on Schedule 1 of the Wildlife & Countryside Act 1981, and may not be disturbed whilst nesting.

4.3 All work to remove the trees should be completed outside of the bird nesting period which is approximately March to August inclusive. Alternatively, any works which must necessarily be carried out during this period should be preceded by a survey to ensure that no nesting birds are present. This restriction also applies to any other habitats which are found to support nesting birds, including ground-nesting. Clearance and construction works must not cause disturbance or harm to any birds which are nesting in the affected habitats at the time.

4.4 Himalayan balsam is a species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such it is an offence to plant or allow this species to grow in the wild.

### Biodiversity Enhancement Measures

#### *Habitat*

4.5 Himalayan balsam is present along the southern edge of the site. Dense stands of the plant are present to the east of the site along the steep slope leading down to the stream. Given the presence of Himalayan balsam directly adjacent to the site and its potential to repeatedly spread, direct treatment within the site boundary may not be cost effective.

4.6 Given the grazing of the site and small amount of Himalayan balsam present at the edges, it is thought that grazing naturally prevents the spread of the species across the site. It is suggested that the Himalayan balsam is trimmed in the first year of management prior to flowering. The site will then be grazed at a suitable stocking density to improve biodiversity of the site. The trampling action of grazing will help to prevent the spread of Himalayan balsam across the site. The distribution of the plant across the site will be monitored and reviewed as part of any management plan devised for the site.

4.7 The bracken within the site boundary will need to be treated and eradicated from the site. This can be achieved through a number of measures, however it should be noted that bracken can take a number of years to control or eradicate from a site. Total eradication

may not always be possible from a site. Bracken control measures can be implemented such as:

- Hand spraying of the bracken using a suitable chemical treatment. Hand spraying would be a preferred method due to the relatively small area of bracken to be treated and the proximity of grazing animals. Hand spraying would allow a more targeted application of the chemical treatment.
- Mechanical methods such as cutting twice a year or rolling early in the summer can also be used. These methods benefit from being used in conjunction with spray treatment of bracken.

4.8 The post and wire fences which form the south and west site boundaries will be removed and replaced with native species hedgerows. If grazing by stock is to be implemented within the site, it is suggested the newly planted hedgerows are fenced to help protect the growing hedge and allow an understory to establish.

4.9 The floral diversity within the site could be improved through on going site management. It is suggested that the site is either subjected to a long term grazing or cutting regime. This will prevent the spread of bramble and bracken across the site once it has been cleared.

#### *Species*

4.10 As discussed above there is a bank along the northern edge of the site which is south facing and currently covered in bracken. If the bracken is removed and grassland covering the bank and remaining site is allowed to grow, the site would become suitable for reptiles.

4.11 The south facing bank within the site boundary is approximately 1m tall and 10m long. By digging out part of the bank and or facing it with rubble or dry stone wall, the site can be improved for a variety of invertebrates and reptile species. The provision of stony areas within the site will provide overwintering areas and shelter for invertebrates and reptiles during poor weather. Appendix 2 provides more details on the proposed dry stone wall section.

4.12 The provision of at least six bird boxes within the trees that line the northern site boundary. It is thought the trees are just outside of the site boundary, if correct permission from the landowner must be sought before the boxes are erected.

## 5.0 REFERENCES

**Bat Conservation Trust (BCT 2012)** *Bat Surveys – Good Practice Guidelines* (2<sup>nd</sup> Edition). Bat Conservation Trust, London.

**CIEEM (2013)** *Guidelines for Preliminary Ecological Appraisal*

**Edgar, P, Foster, J & Baker, J (2010)** *Reptile Habitat Management Handbook*. Natural England/Amphibian & Reptile Conservation Trust, Bournemouth.

**Institute of Environmental Assessment (IEA 1995)** *Guidelines for Baseline Ecological Assessment*. IEA Lincoln.

**Nature Conservancy Council (NCC 1989)** *Guidelines for the Selection of Biological SSSIs*. NCC Peterborough.

**Nature Conservancy Council (NCC 1990)** *Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit*. NCC Peterborough.

**Rodwell, J (Ed) (1991-2000)** *British Plant Communities*. Vols 1-5. Cambridge University Press.

**Wales Biodiversity Partnership (WBP 2016)** *Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government.

**Froglife (1999)** *Reptile Survey : an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*

**APPENDIX 1: SPECIES RECORDED**

All species recorded by DCE 2016, unless otherwise indicated:

Species	Common Name	Indicator Species					
		W	NG	CG	AG	MG	PIL
<b>Trees &amp; Shrubs</b>							
<i>Acer campestre</i>	field maple	W					
<i>Acer pseudoplatanus</i>	sycamore						
<i>Corylus avellana</i>	hazel						
<i>Crataegus monogyna</i>	hawthorn						
<i>Fraxinus excelsior</i>	ash						
<i>Pinus</i> sp	pine sp.						
<i>Quercus robur</i>	pedunculate oak						
<i>Rubus fruticosus</i> agg	bramble						
<i>Salix</i> sp	willow sp						
<b>Herbaceous Plants</b>							
<i>Agrostis capillaris</i>	common bent						
<i>Anthoxanthum odoratum</i>	sweet vernal-grass						
<i>Bellis perennis</i>	daisy						
<i>Blechnum spicant</i>	hard-fern	W					
<i>Cerastium fontanum</i>	common mouse-ear						
<i>Chamerion angustifolium</i>	rosebay willowherb						
<i>Cirsium arvense</i>	creeping thistle						
<i>Cirsium vulgare</i>	spear thistle						
<i>Digitalis purpurea</i>	foxglove						
<i>Festuca ovina</i>	sheep's fescue			CG	AG		PIL
<i>Galium saxatile</i>	heath bedstraw				AG		
<i>Geranium dissectum</i>	cut-leaved crane's bill						
<i>Holcus lanatus</i>	yorkshire fog						
<i>Holcus mollis</i>	creeping soft-grass						
<i>Impatiens glandulifera</i>	himalayan balsam						
<i>Juncus bufonius</i>	toad rush						
<i>Juncus effusus</i>	soft rush						
<i>Lotus corniculatus</i>	common bird's-foot trefoil		NG	CG			PIL
<i>Luzula campestris</i>	field wood-rush		NG				
<i>Matricaria discoidea</i>	pineapple-weed						
<i>Pilosella officinarum</i>	mouse-ear hawkweed		NG	CG	AG		PIL
<i>Poa trivialis</i>	rough meadow-grass						
<i>Potentilla anserina</i>	silverweed				AG		
<i>Potentilla erecta</i>	tormentil		NG		AG	MG	
<i>Primula vulgaris</i>	primrose	W					
<i>Prunella vulgaris</i>	self heal						
<i>Pteridium aquilinum</i>	bracken						
<i>Ranunculus repens</i>	creeping buttercup						
<i>Rumex acetosella</i>	sheep's sorrel				AG		
<i>Rumex crispus</i>	curled dock						
<i>Rumex obtusifolius</i>	broad-leaved dock						
<i>Senecio jacobaea</i>	common ragwort						
<i>Sonchus</i> sp	Sow thistle sp.						
<i>Urtica dioica</i>	common nettle						

<i>Veronica chamaedrys</i>	germander speedwell						
<i>Veronica officinalis</i>	heath speedwell		NG		AG		
<i>Vicia sp</i>	tare sp						
<b>WBP (2008) Totals</b>		3	5	3	7	1	3

**Key**

PS - Regionally Scarce - Primary Species in SWWSP (2004)

CS - Regionally Uncommon - Contributory Species in SWWSP (2004)

**Indicator Species (SWWSP 2004)**

W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG - Acid Grassland, PMG Purple Moor Grass and Rush Pasture, PIL - Post Industrial Land, TF Species-rich Tillage Fields and Margins

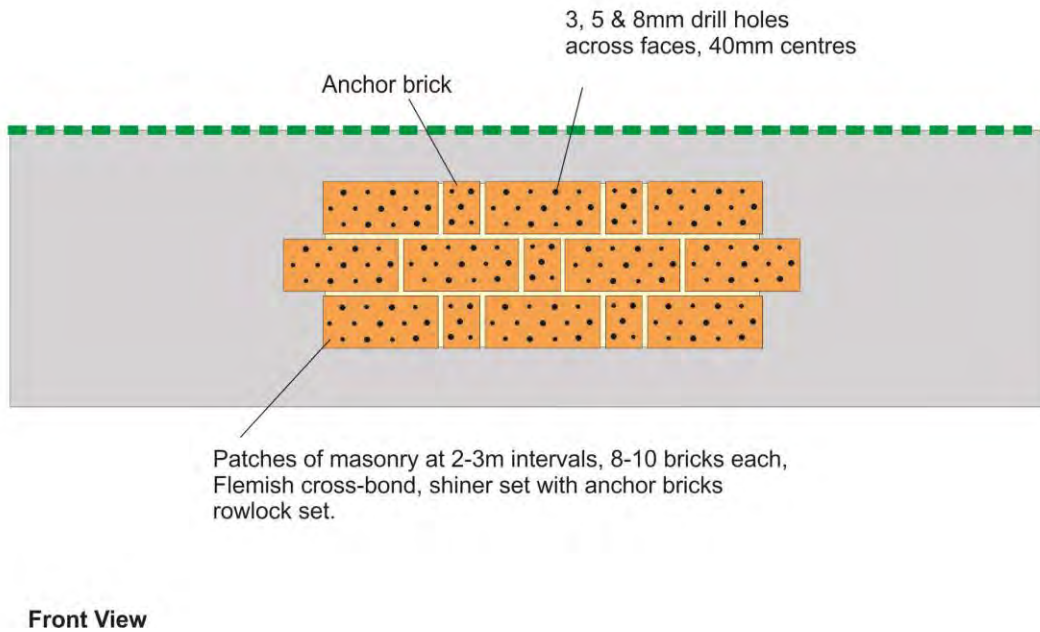
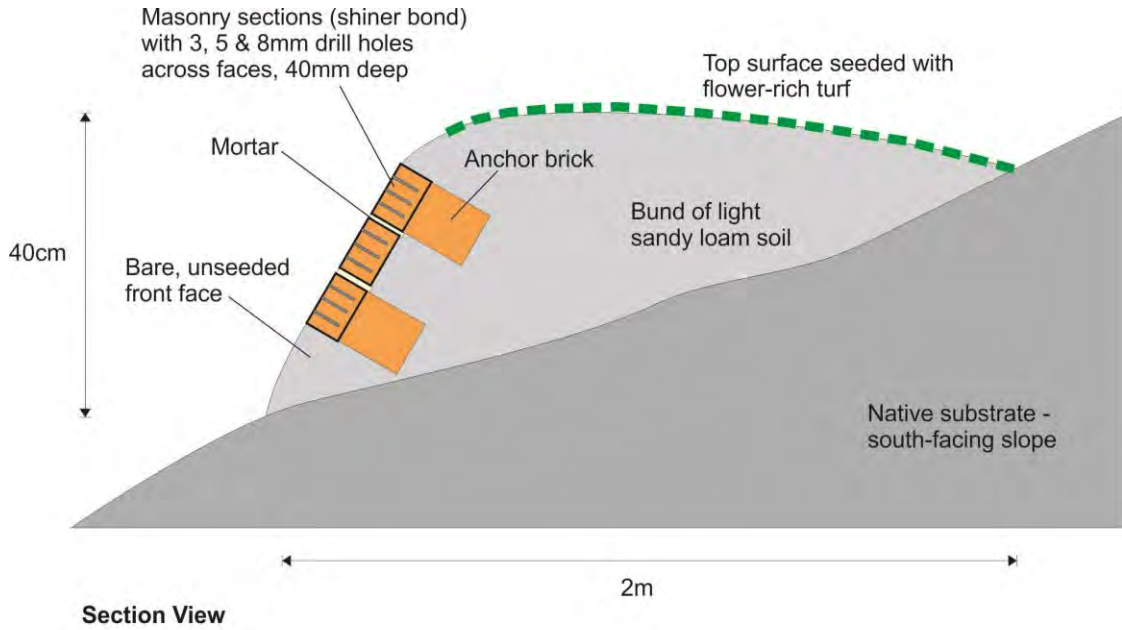
**SINC Selection**

Sites which support 1 primary species or 5 contributory species or habitats which support 8 neutral grassland, 8 calcareous grassland, 7 acid grassland, 12 Purple Moor Grass and Rush Pasture or 8 tillage field and margins indicator species should be considered for selection as a SINC. Post Industrial sites which support 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should also be considered for selection.



**APPENDIX 2: EXAMPLES OF BEETLE BANK STRUCTURE**

(The brick insert sections are optional)



**PHOTOGRAPHS OF THE SITE – June 2016**



Site looking north east



Bracken along southern site edge



Northern site edge



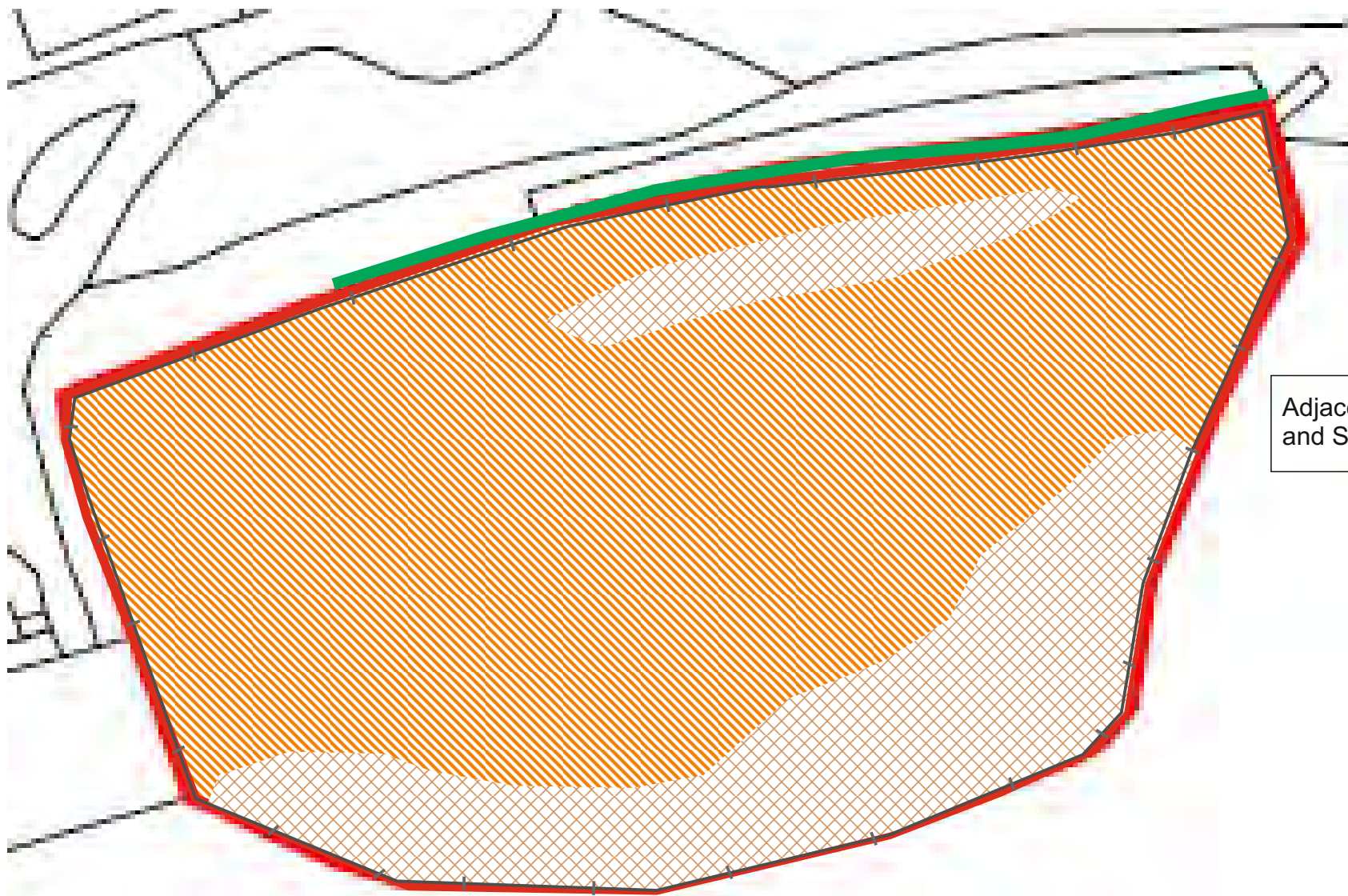
View of south facing bank on site



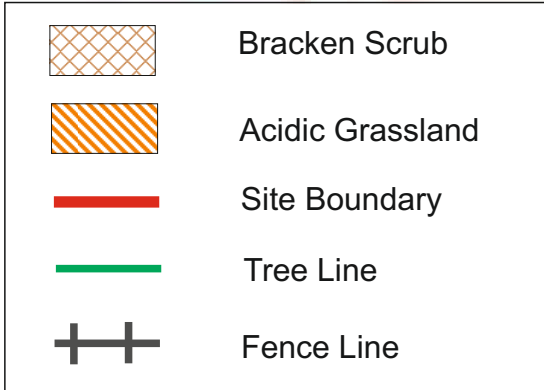
Site looking south east



Western site edge



Adjacent Woodland  
and Stream



***NPTCBC Biodiversity Compensation Sites  
Land at Abercregan, Cymmer***

***Plan 1: Phase 1 Map***

DCE 844                      NTS                      Feb 2017


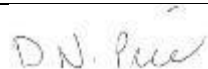
**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**

**ECOLOGICAL ASSESSMENT: LAND AT BROOK TERRACE,  
TAIGWAITH, NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd  
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH  
Tel: 029 20 350120 Fax: 029 20 711997  
info@dce.org.uk**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		15.02.17
	Dr Neil Price BSc (Hons) MSc PhD MCIEEM		23.01.17
<b>Version No./Stage</b>	V1.0		

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Borough Council (NPTCBC). It sets out the results of an Extended Phase 1 Habitat survey of a parcel of land off Brook Terrace, Taigwaith.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the east of the settlement of Taigwaith, Ammanford at NGR SN 71836 12081. The site measures approximately 0.59ha. The site consists of marshy grassland, neutral grassland, hedgerows, tree line and bramble scrub. The site is roughly rectangular in shape and slopes gently from the east to west of the site.
- 1.3 A small amount of housing is situated to the north and east of the site. Tree lines and fields are present immediately to the south and west of the site. The site and its immediate surrounds are rural in nature. In the wider landscape, a large mining site is situated approximately 500m to the north. The Amman Valley Trotting ground is located to the south west of the site with the remaining landscape consisting of fields and hedgerows and or tree lines.
- 1.4 NPTCBC are exploring different options to help effectively deal with ecology and biodiversity issues within the council's planning system. At present, some planning applications are having difficulty in dealing with potential biodiversity losses within the site footprint whilst achieving a viable development. Such issues tend to arise on sites where habitats have non-statutory protection and where non-European protected species are encountered. Whilst the default position of the council is that biodiversity issues are dealt with within the site footprint, some issues cannot always be accommodated. Problems then arise when developers need to find suitable off site locations to use as mitigation for any potential biodiversity impacts.
- 1.5 The Biodiversity Compensation Sites Project aims to identify, survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to benefit and enhance biodiversity. The sites would be used as mitigation for biodiversity losses experienced through the planning system.
- 1.6 The remainder of this report sets out the results of an ecological survey and assessment of the site, which was put forward by NPTCBC as a potentially suitable site for enhancement works.

### 1.7 Designated Sites of Biodiversity Interest

#### *Statutory Sites*

- 1.7.1 Taigwaith SSSI consist of three fields to the south of the site, the closest of which is approximately 300m to the south.

#### *Non-statutory Sites*

- 1.7.2 ‘Sites of Importance for Nature Conservation’ (SINC) are one of a class of non-statutory nature conservation designations which are recognised throughout the UK under a wide range of titles, but which are collectively referred to as ‘Wildlife Sites’. Wildlife Sites are so-called ‘third tier’ sites, generally ranked below sites which are of international or national biodiversity significance, but which are considered to have substantive nature conservation value in the sub-national (ie regional or district) context. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a material planning consideration in the relevant statutory development plan. The framework for the identification and designation of ‘Wildlife Sites’ is set out in various Government documents, and is referred to in *Planning Policy Wales* (2017, 9th Edition) and *Technical Advice Note 5: Nature Conservation & Planning* (2009).
- 1.7.3 There are various SINC sites within 1km of the site. All suitable watercourses within NPTCBC are designated as SINC sites and there appear to be numerous sites within 1km. The closest watercourse SINC, Land to the Rear of Brook Terrace, flows along the western site boundary.
- 1.7.4 Ancient Woodland SINC sites are also present to the south west of the site approximately 700m away.
- 1.7.5 Maerdy Playing Fields, Tairgwaith is a designated conservation area which is managed to benefit biodiversity within the area. The fields are approximately 750m to the south west of the site.

## 2.0 APPROACH AND METHODS

### 2.1 Survey Methodology

- 2.1.1 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and warm, and was subject to an extended phase 1 habitat survey/preliminary ecological appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the phase 1 vegetation classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats, which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest.
- 2.1.2 The methodology also requires the recording of conspicuous fauna species such as birds, herptiles (ie amphibians and reptiles), mammals and invertebrates such as butterflies and dragonflies, paying particular attention to the presence (or possible presence) of any rare or protected species.
- 2.1.3 Where appropriate, the habitats of the site were also characterised against the descriptions provided by the National Vegetation Classification (NVC) as set out by Rodwell (1991 *et seq*).

#### Survey Constraints

- 2.1.4 There were no constraints to this survey. The site visit was undertaken at an optimal time of year for botanical surveys and all areas of the site were fully accessible.

### 2.2 Data Trawl

- 2.2.1 In addition to the original survey, a data trawl was carried out using Neath Port Talbot County Council ecological records.



### 3.0 SURVEY RESULTS

#### 3.1 Habitats & Vegetation

3.1.1 The results of the vegetation and habitats survey are shown on Plan 1 of this report, and are described briefly below.

##### *Notable Plant Species*

3.1.2 No nationally rare or scarce species are recorded from the site.

##### *Notable Habitats*

3.1.3 Based on the current assessment none of the habitats within the site qualify as SINC habitats. However the marshy grassland areas are considered to be qualify as section 7 habitat and 'Priority Habitats' of the UK Biodiversity Action Plan (UK BAP) or its Welsh equivalent (WBP, 2016).

##### *Tree Line*

3.1.4 The western and northern site boundaries lined by trees with a bramble scrub understorey. Species include grey willow (*Salix cinerea*), hazel (*Corylus avellana*) and rowan (*Sorbus aucuparia*); honeysuckle (*Lonicera periclymenum*), holly (*Ilex aquifolium*), cotoneaster (*Cotoneaster* sp.) and rosebay willow herb (*Chamerion angustifolium*) also occur.

##### *Bramble Scrub*

3.1.5 Bramble dominated scrub is starting to encroach into the site from the north and north western edge of the site. There are a few bramble scrub stands within the neutral grassland area as well. The scrub is located within and along the tree line mainly.

3.1.6 An OS map of the area appears to show a pond in the north-west corner of the site. The bramble scrub was too dense to allow access into this corner of the site to fully investigate the area. It is thought likely that the pond has naturally filled in and scrubbed over through a lack of management.

##### *Hedgerow*

3.1.7 A hedgerow is present along the southern site boundary. Woody species noted within the hedgerow include holly, hawthorn (*Crataegus monogyna*), Elder (*Sambucus nigra*) and a cotoneaster species. Other species noted within the hedgerow include foxglove (*Digitalis purpurea*), nettle (*Urtica dioica*), dog rose (*Rosa canina*), bracken (*Pteridium aquilinum*), tutsan (*Hypericum androsaemum*) and broad-leaved willowherb (*Epilobium montanum*).

3.1.8 The western and northern site boundaries may have once constituted hedgerows. However, at the time of the site visit the boundaries are made up of mature trees and are now considered tree lines instead of hedgerows.

### ***Neutral Grassland***

- 3.1.9 The grassland to the east of the site is considered to be neutral grassland. This grassland is generally drier than remaining grassland areas and consists of Yorkshire fog (*Holcus lanatus*), meadow foxtail (*Alopecurus pratensis*), sweet vernal grass (*Anthoxanthum odoratum*), creeping buttercup (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*), broad-leaved dock (*Rumex obtusifolius*), curled dock (*Rumex crispus*), crested dog's-tail (*Cynosurus cristatus*), bird's-foot trefoil (*Lotus corniculatus*), common sorrel (*Rumex acetosa*) and ribwort plantain (*Plantago lanceolata*).

### ***Marshy Grassland***

- 3.1.10 The grassland to the western end of the site is considered to be marshy grassland. The grassland is wet underfoot with a small stream along the western boundary. The site slopes downhill from east to west and it is thought that the marshy grassland is present where the water table is closer to ground level. Species noted within the sward include compact rush (*Juncus conglomeratus*), soft rush (*Juncus effusus*), meadowsweet (*Filipendula ulmaria*), jointed rush (*Juncus articulatus*), common spike rush (*Eleocharis palustris*), marsh pennywort (*Hydrocotyle vulgaris*), brook lime (*Veronica beccabunga*), ragged robin (*Lychnis flos-cuculi*) and floating sweet grass (*Glyceria fluitans*).
- 3.1.11 Some scattered stands of yellow flag iris (*Iris pseudacorus*) are visible across the marshy grassland areas.

### ***Standing Water***

- 3.1.12 An area of standing water was observed along the western boundary. It is thought likely that the standing water is actually a ditch however a direction of flow of water was not evident during the site survey. A pond is shown to the north west of the site on the OS map, however this was not visible during the site survey. It is thought the pond has naturally vegetated over and the ditch may have been created to serve the pond.

## **3.2 Fauna**

- 3.2.1 A broad assessment for the potential for protected species to be present was undertaken during the site visit. Based on the local species records and types of habitat found within the site boundary it was felt the below species could be present within the site:

- A small number of common bat species could use the site for foraging purposes.
- A range of common nesting birds could use the scrub, hedgerows and tree lines.
- Low numbers of common reptile species, in particular grass snake given the wet nature of the site.

- 3.2.2 It was also felt that the site has the potential for the following unprotected species:

- A range of common and ubiquitous invertebrate species

- A small number of common synanthropic species such as hedgehog, house mouse, voles and shrews for foraging and potentially nesting.

## 4.0 RECOMMENDATIONS

- 4.1 The recommendations made within this section are a series of measures that can be implemented to improve the biodiversity of the site. If this site is taken forward as part of the Biodiversity Compensation Sites Project a full management plan for the site will be required.

### Statutory Requirements

- 4.2 Nearly all species of bird are protected against killing or injury as individuals under UK legislation, and this protection extends to their nests, eggs and young. A number of especially rare species are subject to enhanced protection under UK law by virtue of their listing on Schedule 1 of the Wildlife & Countryside Act 1981, and may not be disturbed whilst nesting.
- 4.3 All work to remove the trees should be completed outside of the bird nesting period which is approximately March to August inclusive. Alternatively, any works which must necessarily be carried out during this period should be preceded by a survey to ensure that no nesting birds are present. This restriction also applies to any other habitats which are found to support nesting birds, including ground-nesting. Clearance and construction works must not cause disturbance or harm to any birds which are nesting in the affected habitats at the time.
- 4.4 Four native reptile species occur in South Wales, comprising common lizard, slow-worm, adder and grass snake. These four species are all afforded so-called 'partial protection' under the amended Wildlife & Countryside Act 1981, which prohibits the deliberate killing or injury of individuals. However, there is no direct protection extended to the habitats which support these species. All four common reptiles are listed as 'Priority Species' in the UK BAP and its Welsh equivalent.

### Biodiversity Enhancement Measures

#### *Habitat*

- 4.5 The hedgerow along the southern site boundary will need to be managed on a rotational basis. The hedgerow should be pruned every four years during the winter. This will also avoid the bird nesting season.
- 4.6 A power line passes over the tree line along the northern site boundary. The trees along this boundary are gappy, most likely due to tree removal under and around the power lines. Given the on-going requirement for such management due to the power lines, it is suggested the trees under and directly adjacent to the power lines are removed and a hedgerow created along the boundary. The hedgerow could then be managed in conjunction with the southern hedge.
- 4.7 The post and wire fence along the eastern site boundary, along Brook Terrace, could be removed and planted with a species rich native hedgerow mix.

- 4.8 If the site is to be grazed by stock the hedgerows on site will require fencing to ensure they are not detrimentally affected by the animals. Stock proof fencing such as a post and wire fence is recommended to protect newly planted species and allow an understory to establish.
- 4.9 The floral diversity within the site could be improved through on going site management. It is suggested that the site is either subjected to a long term grazing or cutting regime. This will prevent the spread of bramble scrub and trees across the site once it has been cleared. Given the wet nature of the site it is suggested that grazing instead of cutting would be a preferable option to avoid damage to the soils on site.
- 4.10 A pond is thought to have previously been present in the north-west corner of the site. The provision of a pond in the same location would benefit the local flora and fauna. An area of open water would provide an additional habitat within the site boundary.

*Species*

- 4.11 The provision of at least six batboxes within the trees that line the western site boundary would provide roosting opportunities for bats.

## 7.0 REFERENCES

- Bat Conservation Trust (BCT 2016)** *Bat Surveys – Good Practice Guidelines* (3<sup>rd</sup> Edition). Bat Conservation Trust, London.
- CIEEM (2013)** *Guidelines for Preliminary Ecological Appraisal*
- Edgar, P, Foster, J & Baker, J (2010)** *Reptile Habitat Management Handbook*. Natural England/Amphibian & Reptile Conservation Trust, Bournemouth.
- Institute of Environmental Assessment (IEA 1995)** *Guidelines for Baseline Ecological Assessment*. IEA Lincoln.
- Nature Conservancy Council (NCC 1989)** *Guidelines for the Selection of Biological SSSIs*. NCC Peterborough.
- Nature Conservancy Council (NCC 1990)** *Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit*. NCC Peterborough.
- Rodwell, J (Ed) (1991-2000)** *British Plant Communities*. Vols 1-5. Cambridge University Press.
- Wales Biodiversity Partnership (WBP 2016)** *Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government.
- Froglife (1999)** *Reptile Survey : an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*

**APPENDIX 1: SPECIES RECORDED**

All species recorded by DCE 2016, unless otherwise indicated:

Species	Common Name	Indicator Species					
		W	NG	CG	AG	MG	PIL
<b>Trees &amp; Shrubs</b>							
<i>Corylus avellana</i>	hazel						
<i>Cotoneaster</i> sp	garden cotoneaster						
<i>Crataegus monogyna</i>	hawthorn						
<i>Hypericum androsaemum</i>	tutsan	W					
<i>Ilex aquifolium</i>	holly						
<i>Lonicera periclymenum</i>	honeysuckle						
<i>Rosa canina</i>	dog rose						
<i>Rubus fruticosus</i> agg	bramble						
<i>Salix cinerea</i>	grey willow						
<i>Sambucus nigra</i>	elder						
<i>Sorbus aucuparia</i>	rowan						
<b>Herbaceous Plants</b>							
<i>Agrostis capillaris</i>	common bent						
<i>Agrostis stolonifera</i>	creeping bent						
<i>Alopecurus pratensis</i>	meadow foxtail						
<i>Anthoxanthum odoratum</i>	sweet vernal-grass						
<i>Carex hirta</i>	hairy sedge						
<i>Carex remota</i>	remote sedge	W					
<i>Centaurea nigra</i>	common knapweed						
<i>Chamerion angustifolium</i>	rosebay willowherb						
<i>Cirsium palustre</i>	marsh thistle						
<i>Cynosurus cristatus</i>	crested dog's-tail						
<i>Digitalis purpurea</i>	foxglove						
<i>Eleocharis palustris</i>	common spike-rush					MG	
<i>Epilobium montanum</i>	broad-leaved willowherb						
<i>Epilobium parviflorum</i>	hoary willowherb						
<i>Epilobium</i> sp	Willowherb sp						
<i>Equisetum arvense</i>	field horsetail						
<i>Filipendula ulmaria</i>	meadowsweet					MG	
<i>Galium saxatile</i>	heath bedstraw				AG		
<i>Geranium robertianum</i>	herb Robert						
<i>Geum urbanum</i>	wood avens						
<i>Glyceria fluitans</i>	floating sweet-grass					MG	
<i>Holcus lanatus</i>	yorkshire fog						
<i>Holcus lanatus</i>	yorkshire fog						
<i>Hyacinthoides non-scripta</i>	bluebell	W					
<i>Hydrocotyle vulgaris</i>	marsh pennywort					MG	
<i>Iris pseudacorus</i>	yellow flag-iris					MG	
<i>Juncus articulatus</i>	jointed rush					MG	
<i>Juncus conglomeratus</i>	compact rush					MG	
<i>Juncus effusus</i>	soft rush						
<i>Lotus corniculatus</i>	common bird's-foot trefoil		NG	CG			PIL
<i>Lotus pedunculatus</i>	greater bird's-foot-trefoil					MG	

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<i>Lychnis flos-cuculi</i>	ragged robin					MG		
<i>Plantago lanceolata</i>	ribwort plantain							
<i>Poa trivialis</i>	rough meadow-grass							
<i>Potentilla anserina</i>	silverweed							
<i>Potentilla erecta</i>	tormentil		NG		AG	MG		
<i>Pteridium aquilinum</i>	bracken							
<i>Ranunculus acris</i>	meadow buttercup							
<i>Ranunculus repens</i>	creeping buttercup							
<i>Rumex acetosa</i>	common sorrel						PIL	
<i>Rumex crispus</i>	curled dock							
<i>Rumex crispus</i>	curled dock							
<i>Rumex obtusifolius</i>	broad-leaved dock							
<i>Senecio jacobaea</i>	common ragwort							
<i>Urtica dioica</i>	common nettle							
<i>Veronica beccabunga</i>	brooklime					MG		
<b>WBP (2008) Totals</b>			<b>3</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>11</b>	<b>2</b>

**Key**

PS - Regionally Scarce - Primary Species in SWWSP (2004)

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W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG – Acid Grassland, PMG Purple Moor Grass and Rush Pasture, PIL – Post Industrial Land, TF Species-rich Tillage Fields and Margins

**SINC Selection**

Sites which support 1 primary species or 5 contributory species or habitats which support 8 neutral grassland, 8 calcareous grassland, 7 acid grassland, 12 Purple Moor Grass and Rush Pasture or 8 tillage field and margins indicator species should be considered for selection as a SINC. Post Industrial sites which support 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should also be considered for selection.



**PHOTOGRAPHS OF THE SITE – June 2016**



Site Looking South East



Southern Site Boundary



Site Looking North West



Eastern Site Boundary Along Brook Terrace



Tree Line Along Western Site Boundary



Scrub being to encroach from north boundary

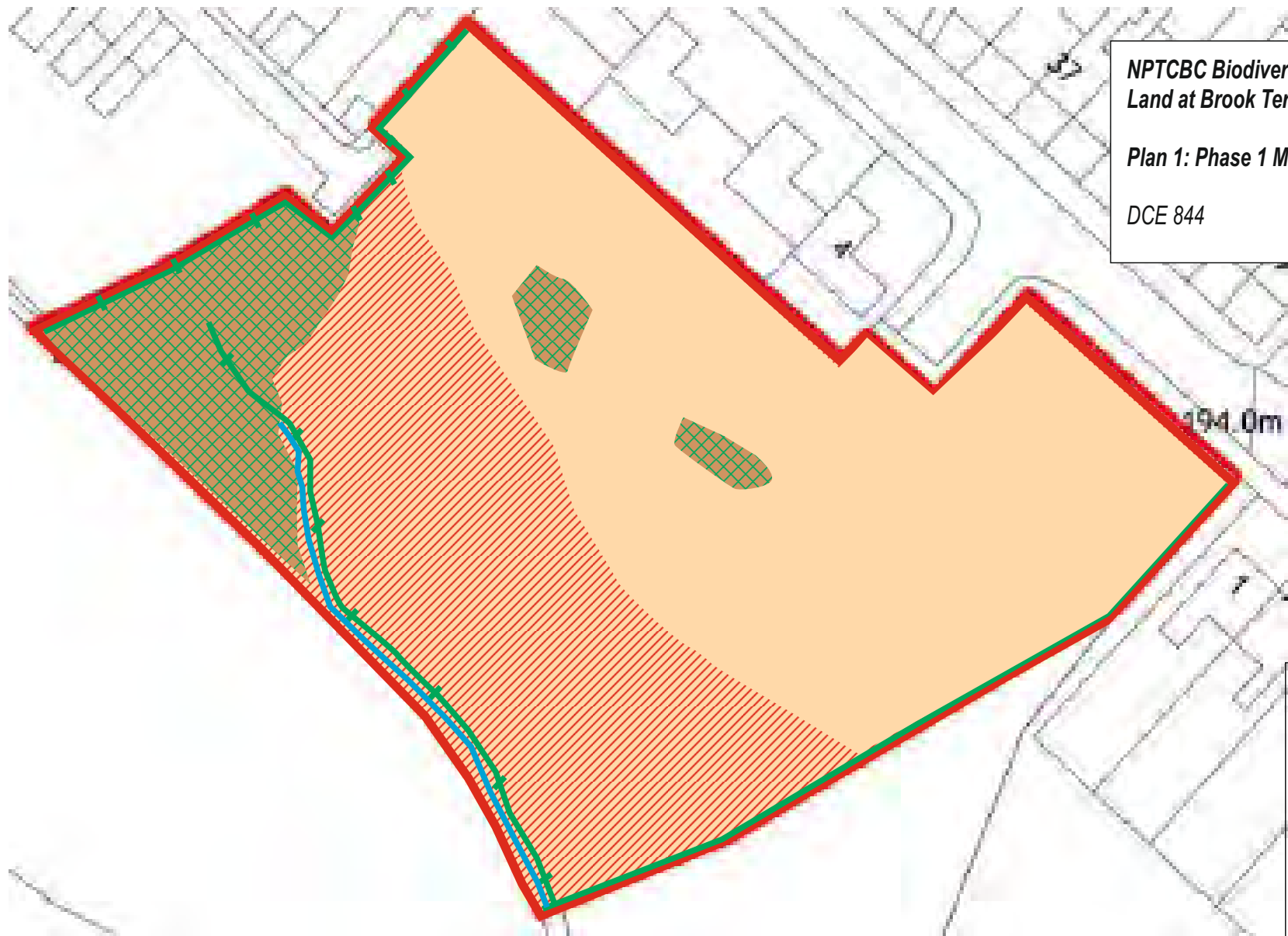
**NPTCBC Biodiversity Compensation Sites  
Land at Brook Terrace, Taigwaith**








**Plan 1: Phase 1 Map**

DCE 844

NTS

February 2017




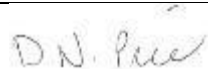
-  Marshy Grassland
-  Bramble Scrub
-  Neutral Grassland
-  Standing Water
-  Site Boundary
-  Hedgerow
-  Tree Line

**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**  
**ECOLOGICAL ASSESSMENT: LAND AT GLYNCORRWG, PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd**  
**Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH**  
**Tel: 029 20 350120 Fax: 029 20 711997**  
**[info@dce.org.uk](mailto:info@dce.org.uk)**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		15.02.17
	Dr Neil Price BSc (Hons) MSc PhD MCIEEM		15.02.17
<b>Version No./Stage</b>	V1.0		

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Borough Council (NPTCBC). It sets out the results of an Extended Phase 1 Habitat survey of a parcel of land off Heol Y Glyn, Glynorrwg, Port Talbot.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the south of the settlement of Glynorrwg, Port Talbot at NGR SS 87467 98524. The site measures approximately 1.38ha. The site consists of scrub, marshy grassland, acid grassland and a tree line. The site is roughly triangular in size with the Heol Y Glyn Road forming the eastern site boundary. Another road and man-made ditch forms the western site boundary. The Ynysorrwg Farm complex, which is currently un-used, forms the northern site boundary. The site slopes steeply from east to west.
- 1.3 The site is situated to the south of Glynorrwg adjacent to the Heol Y Glyn Road. A few light industrial units, Glynorrwg Ponds Visitor Centre and a series of playing fields are present to the west of the site. The Afon Corrwg lies approximately 300m to the west of the site beyond the light industrial units. The site is located within a steep valley with the wider landscape being made up mostly of plantation woodland.
- 1.4 NPTCBC are exploring different options to help effectively deal with ecology and biodiversity issues within the council's planning system. At present, some planning applications are having difficulty in dealing with potential biodiversity losses within the site footprint whilst achieving a viable development. Such issues tend to arise on sites where habitats have non-statutory protection and where non-European protected species are encountered. Whilst the default position of the council is that biodiversity issues are dealt with within the site footprint, some issues cannot always be accommodated. Problems then arise when developers need to find suitable off site locations to use as mitigation for any potential biodiversity impacts.
- 1.5 The Biodiversity Compensation Sites Project aims to identify, survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to benefit and enhance biodiversity. The sites would be used as mitigation for biodiversity losses experienced through the planning system.
- 1.6 The remainder of this report sets out the results of an ecological survey and assessment of the site, which was put forward by NPTCBC as a potentially suitable site for enhancement works.

### 1.7 Designated Sites of Biodiversity Interest

#### *Statutory Sites*

- 1.7.1 There are no statutory sites of nature conservation interest within 1km of the proposed development site.

#### *Non-statutory Sites*

- 1.7.2 ‘Sites of Importance for Nature Conservation’ (SINC) are one of a class of non-statutory nature conservation designations which are recognised throughout the UK under a wide range of titles, but which are collectively referred to as ‘Wildlife Sites’. Wildlife Sites are so-called ‘third tier’ sites, generally ranked below sites which are of international or national biodiversity significance, but which are considered to have substantive nature conservation value in the sub-national (ie regional or district) context. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a material planning consideration in the relevant statutory development plan. The framework for the identification and designation of ‘Wildlife Sites’ is set out in various Government documents, and is referred to in *Planning Policy Wales* (2017, 9th Edition) and *Technical Advice Note 5: Nature Conservation & Planning* (2009).
- 1.7.3 There are various SINC sites within 1km of the site. All suitable watercourses within NPTCBC are designated as SINC sites. The closest site is the Land at Glyncorrwg Watercourse SINC which appears to flow between fields 1 and 2 and along the north, south and north western site boundary.
- 1.7.4 The land associated with Ynyscorrwg Farm, directly to the north of the site, is designated as a candidate SINC site. The Bryn Gwyn candidate SINC is the next closest such site and is located approximately 490m to the north-west of the site.
- 1.7.5 Two Ancient Woodland SINC sites are present within 1km of the site, the closest of which is approximately 750m to the north.

## 2.0 APPROACH AND METHODS

### 2.1 Survey Methodology

- 2.1.1 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and warm, and was subject to an extended phase 1 habitat survey/preliminary ecological appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the phase 1 vegetation classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats, which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest.
- 2.1.2 The methodology also requires the recording of conspicuous fauna species such as birds, herptiles (ie amphibians and reptiles), mammals and invertebrates such as butterflies and dragonflies, paying particular attention to the presence (or possible presence) of any rare or protected species.
- 2.1.3 Where appropriate, the habitats of the site were also characterised against the descriptions provided by the National Vegetation Classification (NVC) as set out by Rodwell (1991 *et seq*).

#### Survey Constraints

- 2.1.4 There were no constraints to this survey. The site visit was undertaken at an optimal time of year for botanical surveys and all areas of the site were fully accessible.

### 2.2 Data Trawl

- 2.2.1 In addition to the original survey, a data trawl was carried out using Neath Port Talbot County Council ecological records.

## 3.0 SURVEY RESULTS

### 3.1 Habitats & Vegetation

3.1.1 The results of the vegetation and habitats survey are shown on Plan 1 of this report, and are described briefly below. For ease of descriptive reference the site has been split into two fields, fields 1 and 2. They are described below.

#### *Notable Plant Species*

3.1.2 No nationally rare or scarce species are recorded from the site.

#### *Notable Habitats*

3.1.3 Based on the current assessment the marshy grassland within the site qualifies as SINC habitat, a section 7 habitat and as a 'Priority Habitat' of the UK Biodiversity Action Plan (UK BAP) or its Welsh equivalent (WBP 2016).

#### *Tree Line*

3.1.4 A tree line is present between fields 1 and 2. A line of mature trees runs roughly horizontally across the site. It is thought likely that the tree line was at one point a hedgerow which has now grown out. Species noted include ash (*Fraxinus excelsior*) and hawthorn (*Crataegus monogyna*).

3.1.5 A few trees are present along the very northern site boundary. Species noted include a species of willow (*Salix* sp.), ash and an unidentified species of conifer tree were noted.

#### *Scrub*

3.1.6 An area of scrubland lies to the south of the site which is starting to encroach northwards into the marshy grassland areas. Species noted within the scrub are bramble (*Rubus fruticosus* agg), ash, hawthorn, alder (*Alnus glutinosa*) and a species of willow.

#### *Marshy Grassland*

3.1.7 The grassland along the western half and south-west of the site in field 1 is considered to be marshy grassland. The site slopes downwards from east to west and it is thought that water is channelled to the marshy grassland areas. Species observed within the sward include lesser spearwort (*Ranunculus flammula*), marsh marigold (*Caltha palustris*), compact rush (*Juncus conglomeratus*), soft rush (*Juncus effusus*), star sedge (*Carex echinata*), marsh pennywort (*Hydrocotyle vulgaris*), marsh bedstraw (*Galium palustre*), ragged robin (*Lychnis flos-cuculi*), greater bird's-foot trefoil (*Lotus pedunculatus*), oval sedge (*Carex ovalis*), heath rush (*Juncus squarrosus*), common cotton grass (*Eriophorum angustifolium*), southern marsh orchid (*Dactylorhiza praetermissa*) and ragged robin (*Lychnis flos-cuculi*).

#### *Acidic Grassland*



- 3.1.8 The grassland along the eastern edge of field 1 is drier towards the top of the slope which runs across the site. A small number of ant hills were also noted with species such as sheep sorrel (*Rumex acetosella*), heath speedwell (*Veronica officinalis*) and tormentil (*Potentilla erecta*) growing on them.
- 3.1.9 Species noted growing within the sward include sweet vernal grass (*Anthoxanthum odoratum*), bilberry (*Vaccinium myrtillus*), sheep's fescue (*Festuca ovina*), heath wood rush (*Luzula multiflora*), heath rush (*Juncus squarrosus*), rough hawkbit (*Leontodon hispidus*) and soft rush.

#### ***Neutral Grassland***

- 3.1.10 The grassland within field 2 is considered to be species poor neutral grassland overall, although some indicator species for acidic grassland were present.. The dominant species observed within the sward include creeping soft grass (*Holcus mollis*), common mouse ear (*Cerastium fontanum*), broad leaved dock (*Rumex obtusifolius*), creeping buttercup (*Ranunculus repens*), perennial rye grass (*Lolium perenne*), crested dogs tail (*Cynosurus cristatus*), yarrow (*Achillea millefolium*) and cocksfoot (*Dactylis glomerata*)

#### ***Dry Stone Wall***

- 3.1.11 An expanse of dry stone wall is present along the western edge of the site. A partial section extends of wall horizontally along the boundary between fields 1 and 2.

### **3.2 Fauna**

- 3.2.1 A broad assessment for the potential for protected species to be present was undertaken during the site visit. Based on the local species records and types of habitat found within the site boundary it was felt the below species could be present within the site:

- A small number of common bat species could use the site for foraging purposes.
- A moderate to high population of common reptile species, in particular grass snake.
- A range of common nesting birds could use the scrub, hedgerows and tree lines.

- 3.2.2 It was also felt that the site has the potential for the following unprotected species:

- A small number of common synanthropic species such as hedgehog, house mouse, voles and shrews for foraging and potentially nesting.
- A range of common and ubiquitous invertebrate species.

## 4.0 RECOMMENDATIONS

- 4.1 The recommendations made within this section are a series of measures that can be implemented to improve the biodiversity of the site. If this site is taken forward as part of the Biodiversity Compensation Sites Project a full management plan for the site will be required.

### Statutory Requirements

- 4.2 Nearly all species of bird are protected against killing or injury as individuals under UK legislation, and this protection extends to their nests, eggs and young. A number of especially rare species are subject to enhanced protection under UK law by virtue of their listing on Schedule 1 of the Wildlife & Countryside Act 1981, and may not be disturbed whilst nesting.
- 4.3 All work to remove the trees should be completed outside of the bird nesting period which is approximately March to August inclusive. Alternatively, any works which must necessarily be carried out during this period should be preceded by a survey to ensure that no nesting birds are present. This restriction also applies to any other habitats which are found to support nesting birds, including ground-nesting. Clearance and construction works must not cause disturbance or harm to any birds which are nesting in the affected habitats at the time.
- 4.4 Four native reptile species occur in South Wales, comprising common lizard, slow-worm, adder and grass snake. These four species are all afforded so-called 'partial protection' under the amended Wildlife & Countryside Act 1981, which prohibits the deliberate killing or injury of individuals. However, there is no direct protection extended to the habitats which support these species. All four common reptiles are listed as 'Priority Species' in the UK BAP and its Welsh equivalent.

### Biodiversity Enhancement Measures

#### *Habitat*

- 4.5 The post and wire fence along the western site boundary could be removed and planted with a hedgerow using a native species mix. The hedgerow will require management to ensure it establishes for the future.
- 4.6 If the site is to be grazed by stock the hedgerows on site will require fencing to ensure they are not detrimentally affected by the animals. Stock proof fencing such as a post and wire fence is recommended to protect newly planted species and allow an understory to establish.
- 4.7 The floral diversity within the site could be maintained through on going site management. It is suggested that the site is either subjected to a long term grazing or cutting regime. This will prevent the spread of bramble scrub and trees across the site once it has been cleared.

Given the wet nature of the site it is suggested that grazing instead of cutting would be a preferable option to avoid damage to the soils on site.

*Species*

- 4.8 The provision of a variety of bird boxes within the mature trees present across the site could provide additional nesting opportunities.
- 4.9 The provision of a variety of bat boxes with the mature trees across the site. It is suggested the bat boxes be restricted to the mature tree line between fields 1 and 2 as they are taller than some of the other younger trees within the site boundary.

## 7.0 REFERENCES

- Bat Conservation Trust (BCT 2016)** *Bat Surveys – Good Practice Guidelines* (3<sup>rd</sup> Edition). Bat Conservation Trust, London.
- CIEEM (2013)** *Guidelines for Preliminary Ecological Appraisal*
- Edgar, P, Foster, J & Baker, J (2010)** *Reptile Habitat Management Handbook*. Natural England/Amphibian & Reptile Conservation Trust, Bournemouth.
- Institute of Environmental Assessment (IEA 1995)** *Guidelines for Baseline Ecological Assessment*. IEA Lincoln.
- Nature Conservancy Council (NCC 1989)** *Guidelines for the Selection of Biological SSSIs*. NCC Peterborough.
- Nature Conservancy Council (NCC 1990)** *Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit*. NCC Peterborough.
- Rodwell, J (Ed) (1991-2000)** *British Plant Communities*. Vols 1-5. Cambridge University Press.
- Wales Biodiversity Partnership (WBP 2016)** *Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government.
- Froglife (1999)** *Reptile Survey : an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*

## APPENDIX 1: SPECIES RECORDED

All species recorded by DCE 2016, unless otherwise indicated:

Species	Common Name	Indicator Species					
		W	NG	CG	AG	MG	PIL
<b>Trees &amp; Shrubs</b>							
<i>Alnus glutinosa</i>	alder						
<i>Cotoneaster</i> sp	garden cotoneaster						
<i>Crataegus monogyna</i>	hawthorn						
<i>Fraxinus excelsior</i>	ash						
<i>Pinus</i> sp	pine sp.						
<i>Rubus fruticosus</i> agg	bramble						
<i>Salix</i> sp	Willow sp						
<b>Herbaceous Plants</b>							
<i>Achillea millefolium</i>	yarrow						
<i>Agrostis capillaris</i>	common bent						
<i>Anthoxanthum odoratum</i>	sweet vernal-grass						
<i>Bellis perennis</i>	daisy						
<i>Blechnum spicant</i>	hard-fern	W					
<i>Caltha palustris</i>	marsh-marigold					MG	
<i>Cardamine flexuosa</i>	wavy bitter-cress						
<i>Carex echinata</i>	star sedge					MG	
<i>Carex nigra</i>	common sedge		NG			MG	
<i>Carex ovalis</i>	oval sedge					MG	
<i>Carex ovalis</i>	oval sedge					MG	
<i>Centaurea nigra</i>	common knapweed		NG	CG			
<i>Cerastium fontanum</i>	common mouse-ear						
<i>Cirsium palustre</i>	marsh thistle						
<i>Cynosurus cristatus</i>	crested dog's-tail						
<i>Dactylis glomerata</i>	cock's-foot						
<i>Dactylorhiza praetermissa</i>	southern marsh orchid		NG			MG	
<i>Deschampsia cespitosa</i>	tufted hair-grass						
<i>Digitalis purpurea</i>	foxglove						
<i>Epilobium parviflorum</i>	hoary willowherb						
<i>Eriophorum angustifolium</i>	common cottongrass					MG	
<i>Eupatorium cannabinum</i>	hemp agrimony					MG	
<i>Festuca ovina</i>	sheep's fescue			CG	AG		PIL
<i>Festuca ovina</i>	sheep's fescue			CG	AG		PIL
<i>Galium palustre</i>	marsh bedstraw					MG	
<i>Holcus lanatus</i>	yorkshire fog						
<i>Holcus mollis</i>	creeping soft-grass						
<i>Hyacinthoides non-scripta</i>	bluebell	W					
<i>Hydrocotyle vulgaris</i>	marsh pennywort					MG	
<i>Impatiens glandulifera</i>	himalayan balsam						
<i>Juncus conglomeratus</i>	compact rush					MG	
<i>Juncus effusus</i>	soft rush						
<i>Juncus inflexus</i>	hard rush						
<i>Juncus squarrosus</i>	heath rush				AG	MG	
<i>Leontodon hispidus</i>	rough hawkbit		NG	CG			
<i>Lolium perenne</i>	perennial rye-grass						

<i>Lotus pedunculatus</i>	greater bird's-foot-trefoil					MG	
<i>Luzula multiflora</i>	heath wood-rush				AG	MG	
<i>Lychnis flos-cuculi</i>	ragged robin					MG	
<i>Myosotis sp</i>	forget-me-not sp						
<i>Plantago lanceolata</i>	ribwort plantain						
<i>Poa trivialis</i>	rough meadow-grass						
<i>Polytrichum sp</i>	hair cup sp						
<i>Potamogeton natans</i>	broad-leaved pondweed						
<i>Potentilla erecta</i>	tormentil		NG		AG	MG	
<i>Prunella vulgaris</i>	self heal						
<i>Pteridium aquilinum</i>	bracken						
<i>Ranunculus acris</i>	meadow buttercup						
<i>Ranunculus flammula</i>	lesser spearwort					MG	
<i>Ranunculus repens</i>	creeping buttercup						
<i>Rumex acetosa</i>	common sorrel						PIL
<i>Rumex acetosella</i>	sheep's sorrel				AG		
<i>Rumex obtusifolius</i>	broad-leaved dock						
<i>Senecio jacobaea</i>	common ragwort						
<i>Taraxacum officinalis</i> agg	dandelion						
<i>Trifolium pratense</i>	red clover		NG				
<i>Vaccinium myrtillus</i>	bilberry	W			AG		PIL
<i>Veronica officinalis</i>	heath speedwell		NG		AG		
<b>WBP (2008) Totals</b>		<b>3</b>	<b>7</b>	<b>4</b>	<b>8</b>	<b>18</b>	<b>4</b>

**Key**

PS - Regionally Scarce - Primary Species in SWWSP (2004)

CS - Regionally Uncommon - Contributory Species in SWWSP (2004)

**Indicator Species (SWWSP 2004)**

W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG - Acid Grassland, PMG Purple Moor Grass and Rush Pasture, PIL - Post Industrial Land, TF Species-rich Tillage Fields and Margins

**SINC Selection**

Sites which support 1 primary species or 5 contributory species or habitats which support 8 neutral grassland, 8 calcareous grassland, 7 acid grassland, 12 Purple Moor Grass and Rush Pasture or 8 tillage field and margins indicator species should be considered for selection as a SINC. Post Industrial sites which support 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should also be considered for selection.

**PHOTOGRAPHS OF THE SITE – June 2016**



Dry stone wall which forms the east boundary



Site looking north within Field 1



View of marshy grassland area



View of scrub encroaching into grassland



View of grassland within field 2



View of acidic grassland

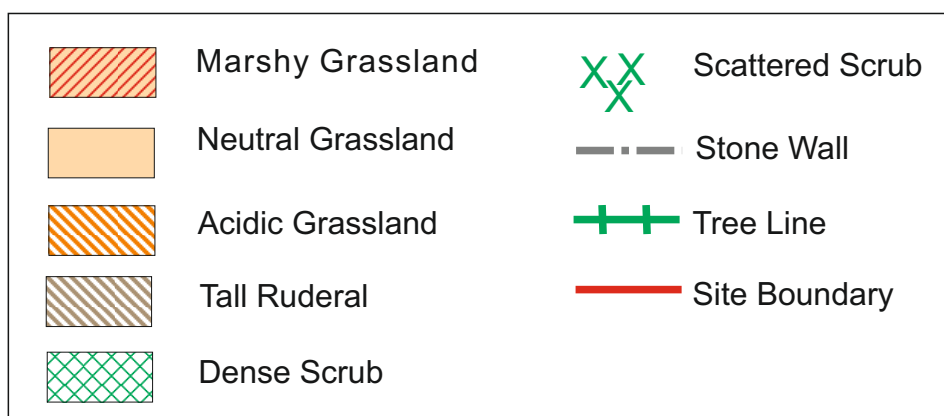
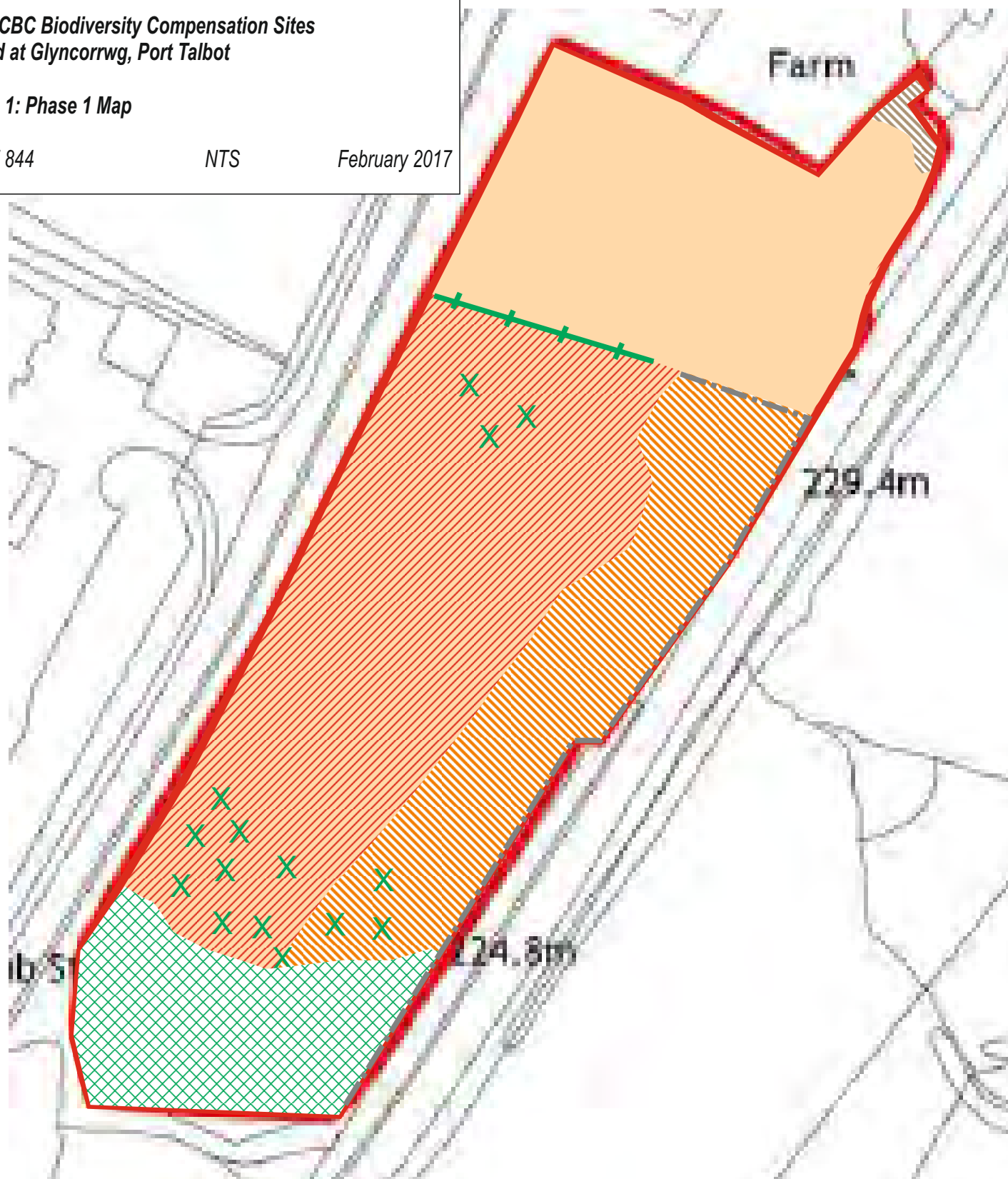
**NPTCBC Biodiversity Compensation Sites  
Land at Glyncorrwg, Port Talbot**

**Plan 1: Phase 1 Map**

DCE 844

NTS

February 2017






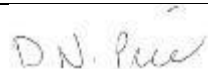
**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**

**ECOLOGICAL ASSESSMENT: LAND AT MARCH HWYEL, RHOS,  
NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd  
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH  
Tel: 029 20 350120 Fax: 029 20 711997  
[info@dce.org.uk](mailto:info@dce.org.uk)**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		07.02.17
	Dr Neil Price BSc (Hons) MSc PhD MCIEEM		07.02.17
<b>Version No./Stage</b>	V1.0		

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Borough Council (NPTCBC). It sets out the results of an Extended Phase 1 Habitat survey of a parcel of land off March Hwyel, Rhos.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the east of the settlement of Rhos, Pontardawe at NGR SN 74155 03215. The site measures approximately 2.8ha. The site consists of marshy grassland, neutral grassland, tree line and areas of scrub. The site is roughly rectangular in shape and slopes gently from the north to south of the site. A footpath runs horizontally across the site on a west to east axis which roughly splits the site into two fields.
- 1.3 Residential housing is present to the west of the site with open fields and hedgerows to the north, east and south. An area of amenity grassland and playing fields lie adjacent to the south west corner of the site. The wider landscape is rural in nature consisting mainly of fields, hedgerows and small areas of woodland. The River Clydach is present approximately 500m to the east of the site.
- 1.4 NPTCBC are exploring different options to help effectively deal with ecology and biodiversity issues within the council's planning system. At present, some planning applications are having difficulty in dealing with potential biodiversity losses within the site footprint whilst achieving a viable development. Such issues tend to arise on sites where habitats have non-statutory protection and where non-European protected species are encountered. Whilst the default position of the council is that biodiversity issues are dealt with within the site footprint, some issues cannot always be accommodated. Problems then arise when developers need to find suitable off site locations to use as mitigation for any potential biodiversity impacts.
- 1.5 The Biodiversity Compensation Sites Project aims to identify, survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to benefit and enhance biodiversity. The sites would be used as mitigation for biodiversity losses experienced through the planning system.
- 1.6 The remainder of this report sets out the results of an ecological survey and assessment of the site, which was put forward by NPTCBC as a potentially suitable site for enhancement works.

### 1.7 Designated Sites of Biodiversity Interest

#### *Statutory Sites*

- 1.7.1 There are no statutory sites of nature conservation interest within 1km of the proposed development site.

#### *Non-statutory Sites*

- 1.7.2 ‘Sites of Importance for Nature Conservation’ (SINC) are one of a class of non-statutory nature conservation designations which are recognised throughout the UK under a wide range of titles, but which are collectively referred to as ‘Wildlife Sites’. Wildlife Sites are so-called ‘third tier’ sites, generally ranked below sites which are of international or national biodiversity significance, but which are considered to have substantive nature conservation value in the sub-national (ie regional or district) context. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a material planning consideration in the relevant statutory development plan. The framework for the identification and designation of ‘Wildlife Sites’ is set out in various Government documents, and is referred to in *Planning Policy Wales* (2017, 9th Edition) and *Technical Advice Note 5: Nature Conservation & Planning* (2009).
- 1.7.3 There are various SINC sites within 1km of the site. A designated watercourse SINC is present along the south eastern boundary of the site. All suitable watercourses within NPTCBC are designated as SINC sites and there appear to be numerous sites between within 1km of the site.
- 1.7.4 Ancient Woodland SINC sites are present along the River Clydach approximately 500m to the east and approximately 750m to the south west.
- 1.7.5 A designated conservation verge is present along the A474 approximately 500m to the south of the site.

## 2.0 APPROACH AND METHODS

### 2.1 Survey Methodology

- 2.1.1 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and warm, and was subject to an extended phase 1 habitat survey/preliminary ecological appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the phase 1 vegetation classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats, which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest.
- 2.1.2 The methodology also requires the recording of conspicuous fauna species such as birds, herptiles (ie amphibians and reptiles), mammals and invertebrates such as butterflies and dragonflies, paying particular attention to the presence (or possible presence) of any rare or protected species.
- 2.1.3 Where appropriate, the habitats of the site were also characterised against the descriptions provided by the National Vegetation Classification (NVC) as set out by Rodwell (1991 *et seq*).

#### Survey Constraints

- 2.1.4 There were no constraints to this survey. The site visit was undertaken at an optimal time of year for botanical surveys and all areas of the site were fully accessible.

### 2.2 Data Trawl

- 2.2.1 In addition to the original survey, a data trawl was carried out using Neath Port Talbot County Council ecological records.

### 3.0 SURVEY RESULTS

#### 3.1 Habitats & Vegetation

3.1.1 The results of the vegetation and habitats survey are shown on Plan 1 of this report, and are described briefly below.

##### *Notable Plant Species*

3.1.2 No nationally rare or scarce species are recorded from the site.

##### *Notable Habitats*

3.1.3 Based on the current assessment none of the habitats within the site qualify as SINC habitats. However the marshy grassland areas are considered to be qualify as section 7 habitat and 'Priority Habitats' of the UK Biodiversity Action Plan (UK BAP) or its Welsh equivalent.

##### *Tree Line*

3.1.4 A tree line runs around the entire site periphery. Although the trees are thought to be just outside the site boundary, the canopies of all the trees hang over into the site and it is likely the root system also extends into the site. Species such as a species of willow (*Salix sp*), oak (*Quercus sp*), and silver birch (*Betula pendula*) were noted.

##### *Scrub*

3.1.5 Willow dominated scrub is present along the western edge of the site. The dominant species within the scrub are small willow trees however dense bramble (*Rubus fruticosus agg*) was also noted. The scrub is denser to the south west of the site but extends northwards following the line of the ditch. The scrub will continue to spread throughout the site without some form of management.

##### *Marshy Grassland*

3.1.6 There are two distinct areas of marshy grassland within the site boundary which are considered to be of high quality. Areas of purple moor grass (*Molinia caerulea*) dominated grassland are present to the south and along a footpath which runs through the middle of the site. In these areas purple moor grass is the dominant species but compact rush (*Juncus conglomeratus*) and marsh bedstraw (*Galium palustre*) were also noted within these areas.

3.1.7 The remaining areas of marshy grassland are dominated by compact rush and soft rush (*Juncus effusus*). Ragged robin (*Lychnis flos-cuculi*), greater bird's-foot trefoil (*Lotus pedunculatus*), marsh thistle (*Cirsium palustre*), toad rush (*Juncus bufonius*), remote sedge (*Carex remota*) and oval sedge (*Carex ovalis*) were also noted in these areas.

### ***Neutral Grassland***

- 3.1.8 Target Note 1, as shown on Plan 1, illustrates an area of high quality neutral grassland. The remaining grassland within the site is considered to be neutral grassland. Species such as yellow rattle (*Rhinanthus minor*), common knapweed (*Centaurea nigra*), pignut (*Conopodium majus*) were dominant in the sward, occasional burnet saxifrage (*Pimpinella saxifrage*) was also observed. Grasses noted include sweet vernal grass (*Anthoxanthum odoratum*), Yorkshire fog (*Holcus lanatus*), crested dogs tail (*Cynosurus cristatus*) and red fescue (*Festuca rubra*).
- 3.1.9 The remaining areas of neutral grassland contain sweet vernal grass, perennial rye grass (*Lolium perenne*) Yorkshire fog, crested dogs tail, red fescue, common knapweed, red clover (*Trifolium pratense*), common mouse ear (*Cerastium fontanum*) and common vetch (*Vicia sativa*).

### ***Ditch***

- 3.1.10 A ditch is present along entire length of the western site boundary. The ditch was dry at the time of the site survey however it is highly likely to hold water during times of high rainfall.

## **3.2 Fauna**

- 3.2.1 A broad assessment for the potential for protected species to be present was undertaken during the site visit. Based on the local species records and types of habitat found within the site boundary the site was assessed as having the potential for the following species:
- A small number of common bat species could use the site for foraging purposes.
  - A range of common nesting birds could use the scrub and tree lines.
  - A small number of common synanthropic species such as hedgehog, house mouse, voles and shrews for foraging and potentially nesting.
  - Low numbers of common reptile species due to the wet nature of the majority of the grassland.
- 3.2.2 It was also felt that the site has the potential for the following unprotected species:
- A small number of common synanthropic species such as hedgehog, house mouse, voles and shrews for foraging and potentially nesting.
  - A small range of common and ubiquitous invertebrate species.

## 4.0 RECOMMENDATIONS

- 4.1 The site is unlikely to be bought forward for development for the foreseeable future as it is designated green wedge under the Local Development Plan. The recommendations made within this section are a series of measures that can be implemented to improve the biodiversity of the site. If this site is taken forward as part of the Biodiversity Compensation Sites Project a full management plan for the site will be required.

### *Statutory Requirements*

- 4.2 Nearly all species of bird are protected against killing or injury as individuals under UK legislation, and this protection extends to their nests, eggs and young. A number of especially rare species are subject to enhanced protection under UK law by virtue of their listing on Schedule 1 of the Wildlife & Countryside Act 1981, and may not be disturbed whilst nesting.
- 4.3 All work to remove the trees should be completed outside of the bird nesting period which is approximately March to August inclusive. Alternatively, any works which must necessarily be carried out during this period should be preceded by a survey to ensure that no nesting birds are present. This restriction also applies to any other habitats which are found to support nesting birds, including ground-nesting. Clearance and construction works must not cause disturbance or harm to any birds which are nesting in the affected habitats at the time.
- 4.4 Four native reptile species occur in South Wales, comprising common lizard, slow-worm, adder and grass snake. These four species are all afforded so-called 'partial protection' under the amended Wildlife & Countryside Act 1981, which prohibits the deliberate killing or injury of individuals. However, there is no direct protection extended to the habitats which support these species. All four common reptiles are listed as 'Priority Species' in the UK BAP and its Welsh equivalent.

### *Biodiversity Enhancement Measures*

#### *Habitat*

- 4.5 Some of the marshy grassland areas are dominated by species of rush which could potentially lower the floristic diversity of the habitat. The prevalence of rush within the grassland could also affect the grazing ability of any stock on site. It is suggested that reducing the dominance of rush through cutting and or intense grazing would be beneficial.
- 4.6 The scrub present within the site is of some use to animals such as nesting birds. It is suggested that the current level of scrub on site is retained or marginally reduced. The scrub should then be subject to low levels of management to ensure it doesn't spread or succeed into woodland.
- 4.7 The floral diversity within the site could be improved through on going site management. It is suggested that the site is either subjected to a long term grazing or cutting regime. This will help to prevent the spread of scrub and trees across the site. Given the wet nature of



the site it is suggested that grazing instead of cutting would be a preferable option to avoid damage to the soils on site.

*Species*

- 4.8 A ditch is present along the western edge of the site which appears to be dry most of the time. It is suggested that a number of small dams are created along the ditch in order to create areas of standing water. This will benefit a wide range of invertebrates and amphibians in the local area.
- 4.9 A reptile hibernacula could be created in an area of neutral grassland to the north east of the site. The hibernacula would need to be created in an area that is generally dry throughout the year. It is suggested it is placed in an area of neutral grassland.

## 5.0 REFERENCES

**Bat Conservation Trust (BCT 2016)** *Bat Surveys – Good Practice Guidelines* (3<sup>rd</sup> Edition). Bat Conservation Trust, London.

**CIEEM (2013)** *Guidelines for Preliminary Ecological Appraisal*

**Edgar, P, Foster, J & Baker, J (2010)** *Reptile Habitat Management Handbook*. Natural England/Amphibian & Reptile Conservation Trust, Bournemouth.

**Institute of Environmental Assessment (IEA 1995)** *Guidelines for Baseline Ecological Assessment*. IEA Lincoln.

**Nature Conservancy Council (NCC 1989)** *Guidelines for the Selection of Biological SSSIs*. NCC Peterborough.

**Nature Conservancy Council (NCC 1990)** *Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit*. NCC Peterborough.

**Rodwell, J (Ed) (1991-2000)** *British Plant Communities*. Vols 1-5. Cambridge University Press.

**Wales Biodiversity Partnership (WBP 2016)** *Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government.

**Froglife (1999)** *Reptile Survey : an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*

## APPENDIX 1: SPECIES RECORDED

All species recorded by DCE 2016, unless otherwise indicated:

Species	Common Name	Indicator Species					
		W	NG	CG	AG	MG	PIL
<b>Trees &amp; Shrubs</b>							
<i>Betula pendula</i>	silver birch						
<i>Crataegus monogyna</i>	hawthorn						
<i>Fraxinus excelsior</i>	ash						
<i>Robur sp</i>	Oak sp	W					
<i>Rubus fruticosus</i> agg	bramble						
<i>Salix</i>	Willow sp						
<b>Herbaceous Plants</b>							
<i>Agrostis stolonifera</i>	creeping bent						
<i>Anthoxanthum odoratum</i>	sweet vernal-grass						
<i>Arum maculatum</i>	cuckoopint						
<i>Carex ovalis</i>	oval sedge					MG	
<i>Carex remota</i>	remote sedge	W					
<i>Centaurea nigra</i>	common knapweed		NG	CG			
<i>Cerastium fontanum</i>	common mouse-ear						
<i>Cirsium palustre</i>	marsh thistle						
<i>Cirsium vulgare</i>	spear thistle						
<i>Conopodium majus</i>	pignut	W	NG		AG		
<i>Cynosurus cristatus</i>	crested dog's-tail						
<i>Dactylis glomerata</i>	cock's-foot						
<i>Deschampsia cespitosa</i>	tufted hair-grass						
<i>Epilobium sp</i>	Willowherb sp						
<i>Equisetum arvense</i>	field horsetail						
<i>Festuca rubra</i>	red fescue						
<i>Galium saxatile</i>	heath bedstraw				AG		
<i>Holcus lanatus</i>	yorkshire fog						
<i>Juncus bufonius</i>	toad rush						
<i>Juncus conglomeratus</i>	compact rush					MG	
<i>Juncus effusus</i>	soft rush						
<i>Juncus squarrosus</i>	heath rush				AG	MG	
<i>Lolium perenne</i>	perennial rye-grass						
<i>Lotus corniculatus</i>	common bird's-foot trefoil		NG	CG			PIL
<i>Lotus pedunculatus</i>	greater bird's-foot-trefoil					MG	
<i>Lychnis flos-cuculi</i>	ragged robin					MG	
<i>Lysimachia nummularia</i>	creeping jenny					Mg	
<i>Molinia caerulea</i>	purple moor-grass						
<i>Pimpinella saxifraga</i>	burnet-saxifrage		NG	CG			
<i>Plantago lanceolata</i>	ribwort plantain						
<i>Poa pratensis</i>	smooth meadow-grass						
<i>Potentilla erecta</i>	tormentil						
<i>Pteridium aquilinum</i>	bracken						
<i>Ranunculus acris</i>	meadow buttercup						
<i>Ranunculus repens</i>	creeping buttercup						
<i>Rhinanthus minor</i>	yellow rattle		NG				

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<i>Rumex acetosa</i>	common sorrel						PIL
<i>Rumex acetosella</i>	sheep's sorrel				AG		
<i>Rumex obtusifolius</i>	broad-leaved dock						
<i>Taraxacum officinalis</i> agg	dandelion						
<i>Trifolium pratense</i>	red clover		NG				
<i>Trifolium repens</i>	white clover						
<i>Urtica dioica</i>	common nettle						
<i>Veronica serpyllifolia</i>	thyme-leaved speedwell						
<i>Vicia sativa</i>	common vetch						
<b>WBP (2008) Totals</b>		<b>2</b>	<b>7</b>	<b>3</b>	<b>4</b>	<b>8</b>	<b>2</b>

**Key**

PS - Regionally Scarce - Primary Species in SWWSP (2004)

CS - Regionally Uncommon - Contributory Species in SWWSP (2004)

**Indicator Species (SWWSP 2004)**

W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG – Acid Grassland, PMG Purple Moor Grass and Rush Pasture, PIL – Post Industrial Land, TF Species-rich Tillage Fields and Margins

**SINC Selection**

Sites which support 1 primary species or 5 contributory species or habitats which support 8 neutral grassland, 8 calcareous grassland, 7 acid grassland, 12 Purple Moor Grass and Rush Pasture or 8 tillage field and margins indicator species should be considered for selection as a SINC. Post Industrial sites which support 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should also be considered for selection.

**PHOTOGRAPHS OF THE SITE – June 2016**



Southern half of the site



Scrub along south western edge of site



Molinia dominated marshy grassland



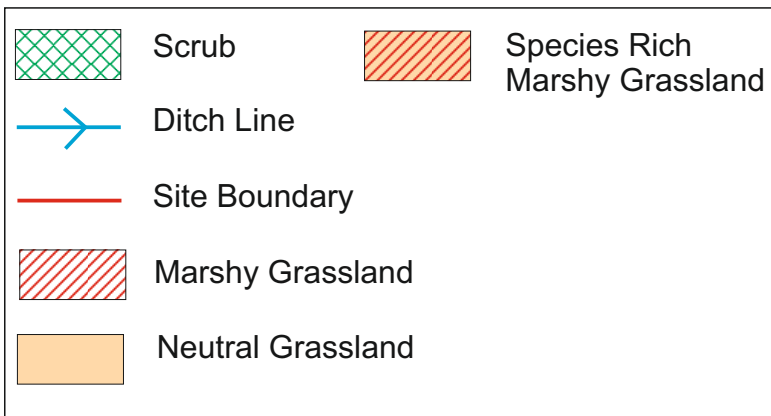
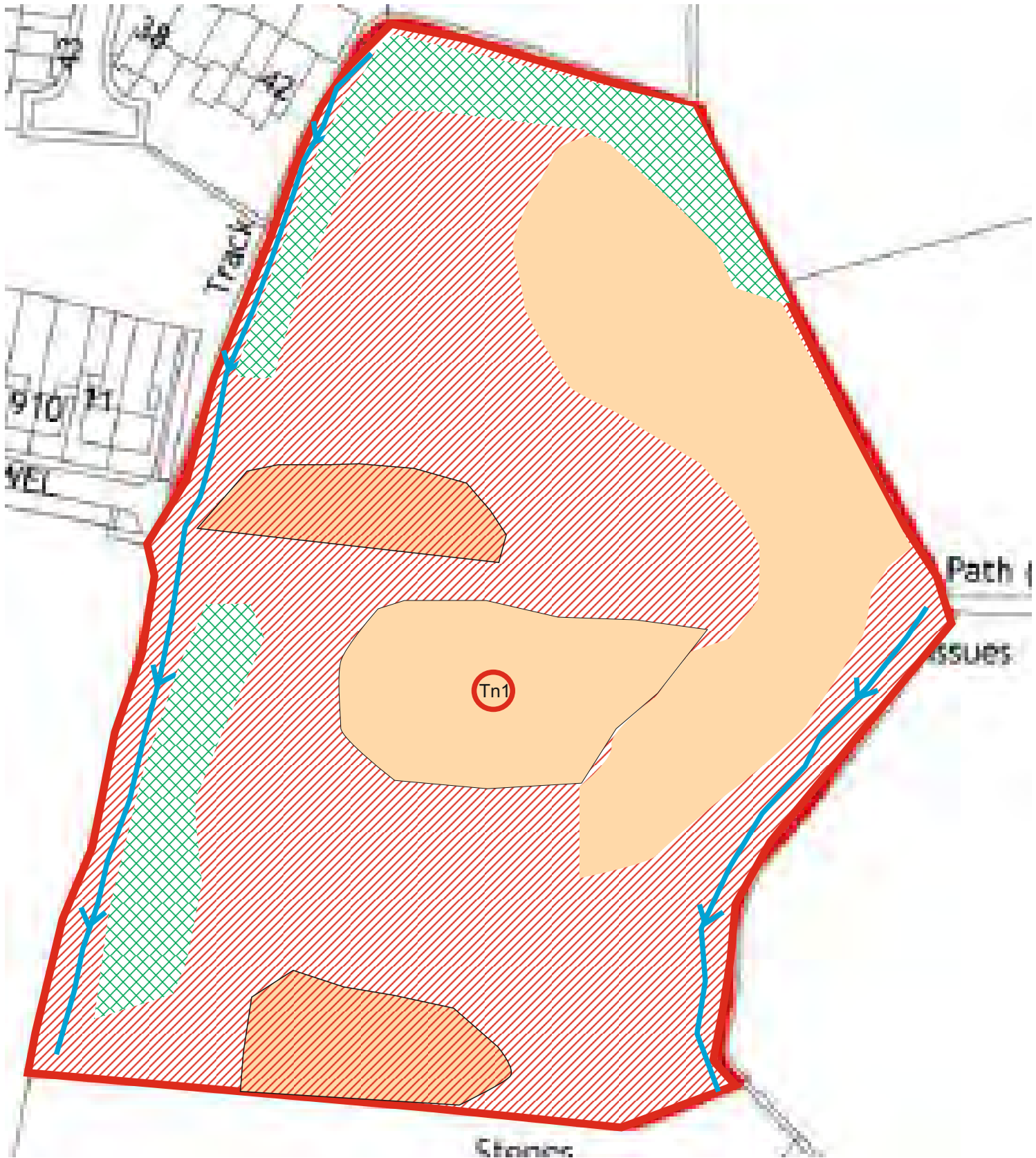
View of neutral grassland area



View of northern half of site



View of ditch along western edge of site



**NPTCBC Biodiversity Compensation Sites**  
**Land at March Hwyl, Rhos**

**Plan 1: Phase 1 Map**


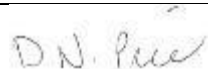
DCE 844                      NTS                      Feb 2017

**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**  
**ECOLOGICAL ASSESSMENT: RECREATION GROUNDS,**  
**PONTARDAWE, NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd**  
**Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH**  
**Tel: 029 20 350120 Fax: 029 20 711997**  
**[info@dce.org.uk](mailto:info@dce.org.uk)**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		07.02.17
	Dr Neil Price BSc (Hons) MSc PhD MCIEEM		23.01.17
<b>Version No./Stage</b>	V1.0		



## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Borough Council (NPTCBC). It sets out the results of an Extended Phase 1 Habitat survey of a parcel of land at the recreation grounds, Pontardawe.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the east of the town of Pontardawe at NGR SN 72806 04367. The site measures approximately 8.02ha. The site consists of woodland, marshy grassland, tall ruderal and amenity grassland habitats. The site is mainly made up of two large well managed playing fields with more natural habitats around the periphery of the site. The site is well used by the local community as a recreation ground and for local sports games.
- 1.3 The River Tawe flows along the eastern and southern site boundary whilst light industrial units are present to west of the site. Residential housing is situated along the northern edge of the site. The wider landscape is semi-urban with the town of Pontardawe to the west of the site and a small amount of housing extending along the roads to the north. A small amount of woodland lies to the east of the site with fields and hedgerows in the wider landscape.
- 1.4 NPTCBC are exploring different options to help effectively deal with ecology and biodiversity issues within the council's planning system. At present, some planning applications are having difficulty in dealing with potential biodiversity losses within the site footprint whilst achieving a viable development. Such issues tend to arise on sites where habitats have non-statutory protection and where non-European protected species are encountered. Whilst the default position of the council is that biodiversity issues are dealt with within the site footprint, some issues cannot always be accommodated. Problems then arise when developers need to find suitable off site locations to use as mitigation for any potential biodiversity impacts.
- 1.5 The Biodiversity Compensation Sites Project aims to identify, survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to benefit and enhance biodiversity. The sites would be used as mitigation for biodiversity losses experienced through the planning system.
- 1.6 The remainder of this report sets out the results of an ecological survey and assessment of the site, which was put forward by NPTCBC as a potentially suitable site for enhancement works.

## 1.7 Designated Sites of Biodiversity Interest

### *Statutory Sites*

- 1.7.1 There are no statutory sites of nature conservation interest within 1km of the proposed development site.

*Non-statutory Sites*

- 1.7.2 ‘Sites of Importance for Nature Conservation’ (SINC) are one of a class of non-statutory nature conservation designations which are recognised throughout the UK under a wide range of titles, but which are collectively referred to as ‘Wildlife Sites’. Wildlife Sites are so-called ‘third tier’ sites, generally ranked below sites which are of international or national biodiversity significance, but which are considered to have substantive nature conservation value in the sub-national (ie regional or district) context. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a material planning consideration in the relevant statutory development plan. The framework for the identification and designation of ‘Wildlife Sites’ is set out in various Government documents, and is referred to in *Planning Policy Wales* (2017, 9th Edition) and *Technical Advice Note 5: Nature Conservation & Planning* (2009).
- 1.7.3 There are various SINC sites within 1km of the site. A designated watercourse SINC, in the form of a ditch, is present within the site boundary. The ditch flows along the north and eastern site boundary. Another watercourse SINC site is present along the east and south boundary of the site, just outside of the site boundary. A woodland SINC site is present to the north east of the site. At its most southern point, the woodland SINC is directly adjacent to the recreation grounds.
- 1.7.4 A candidate SINC site is present adjacent to the northern boundary of the site. The candidate SINC is thought to cover the canal which flows through Pontardawe.

## 2.0 APPROACH AND METHODS

### 2.1 Survey Methodology

- 2.1.1 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and warm, and was subject to an extended phase 1 habitat survey/preliminary ecological appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the phase 1 vegetation classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats, which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest.
- 2.1.2 The methodology also requires the recording of conspicuous fauna species such as birds, herptiles (ie amphibians and reptiles), mammals and invertebrates such as butterflies and dragonflies, paying particular attention to the presence (or possible presence) of any rare or protected species.
- 2.1.3 Where appropriate, the habitats of the site were also characterised against the descriptions provided by the National Vegetation Classification (NVC) as set out by Rodwell (1991 *et seq*).

#### Survey Constraints

- 2.1.4 There were no constraints to this survey. The site visit was undertaken at an optimal time of year for botanical surveys and all areas of the site were fully accessible.

### 2.2 Data Trawl

- 2.2.1 In addition to the original survey, a data trawl was carried out using Neath Port Talbot County Council ecological records.

### 3.0 SURVEY RESULTS

#### 3.1 Habitats & Vegetation

3.1.1 The results of the vegetation and habitats survey are shown on Plan 1 of this report, and are described briefly below.

##### *Notable Plant Species*

3.1.2 No nationally rare or scarce species are recorded from the site.

##### *Notable Habitats*

3.1.3 Based on the current assessment none of the habitats within the site qualify as SINC habitats and or as 'Priority Habitats' of the UK Biodiversity Action Plan (UK BAP) or its Welsh equivalent.

##### *Broadleaved Woodland*

3.1.4 A narrow expanse of broadleaved woodland runs around the entire site periphery. A tree line dissects the site as well in essence creating two field areas. Species such as sycamore (*Acer pseudoplatanus*), horse chestnut (*Aesculus hippocastanum*), ash (*Fraxinus excelsior*), holly (*Ilex aquifolium*), hazel (*Corylus avellana*), English elm (*Ulmus procera*) and blackthorn (*Prunus spinosa*).

3.1.5 The woodland along the southern edge of the site is more accessible allowing some species identification within the understory. Species noted within the understory of the woodland include the invasive Japanese knotweed (*Fallopia japonica*) and Himalayan balsam (*Impatiens glandulifera*), as well as enchanter's nightshade (*Circaea lutetiana*).

##### *Marshy Grassland*

3.1.6 An area of species poor marshy grassland was noted adjacent to the ditch line to the north of the site. Species such as hairy sedge (*Carex hirta*), false fox sedge (*Carex otrubae*), jointed rush (*Juncus articulatus*) were abundant in these areas. Tall ruderal vegetation is beginning to encroach into the marshy grassland areas.

##### *Amenity Grassland*

3.1.7 A large expanse of amenity grassland was noted within the site boundary. Amenity grassland is the most abundant habitat on site and covers most of the northern and southern fields. The grass had recently been cut making species identification difficult. Due to the short and even nature of the grassland it is thought these areas are frequently mown with the cuttings removed.

##### *Tall Ruderal Vegetation*

3.1.8 Tall ruderal vegetation is present along the ditch to the north west of the site. Similar habitats are also scattered across the site in unmanaged areas, generally around the

periphery. Species such as ragwort (*Senecio jacobaea*), imperforate St. John's-wort (*Hypericum maculatum*), creeping thistle (*Cirsium arvense*), rosebay willowherb (*Chamerion angustifolium*), common nettle (*Urtica dioica*), hogweed (*Heracleum sphondylium*) and creeping buttercup (*Ranunculus repens*) are present within such habitats.

### ***Ditch***

- 3.1.9 A ditch is present along the northern and western site boundary. Although the ditch was overgrown it was possible to see in multiple areas that it held water. Species such as water mint (*Mentha aquatic*), hemlock water dropwort (*Oenanthe crocata*), hemp agrimony (*Eupatorium cannabinum*) and pendulous sedge (*Carex pendula*) are present within or along the banks of the ditch.

### ***Invasive Non-native Species***

- 3.1.10 A dense stand of Japanese knotweed is present to the north of the site along the ditch. The knotweed extends into the woodland edge and it is thought likely to be encroaching into the site from the adjacent canal. Scattered small stands of knotweed are visible across the site along the boundary areas. There is also some potential evidence of previous knotweed treatment within the woodland areas to the west of the site.
- 3.1.11 A small amount of Himalayan balsam is present along the south and south east boundary are of the site. The balsam is present in the adjacent woodland understory and is thought likely to be spreading into the site from the River Tawe. It would seem likely that the high levels of mowing up to the woodland edge has prevented the spread of the species further into the site.

## **3.2 Fauna**

- 3.2.1 A broad assessment for the potential for protected species to be present was undertaken during the site visit. Based on the local species records and types of habitat found within the site boundary it was felt the below species could be present within the site:
- A small number of common bat species could use the site for foraging purposes.
  - The mature trees around the site have potential for roosting bats.
  - Low numbers of common reptile species.
  - A range of common nesting birds could use the scrub and tree lines.
- 3.2.2 It was also felt that the site has the potential for the following unprotected species:
- A small number of common synanthropic species such as hedgehog, house mouse, voles and shrews for foraging and potentially nesting.
  - A range of common and ubiquitous invertebrate species.
  - Low numbers of common reptile species.

## 4.0 RECOMMENDATIONS

- 4.1 The site is unlikely to be bought forward for development for the foreseeable future as it is part leased to a local sports club. The recommendations made within this section are a series of measures that can be implemented to improve the biodiversity of the site. If this site is taken forward as part of the Biodiversity Compensation Sites Project a full management plan for the site will be required.
- 4.2 It is recognised that the main function of the site is as a recreation space for the local community. The below recommendations do not seek to remove or impact on any of the areas currently used for recreation purposes. The recommendations relate solely to the edges of the site boundary and areas which are currently in frequently managed.

### Statutory Requirements

- 4.3 All bat species and their roosts, are protected throughout their European range, being listed on Annex 4 of the EU Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992 ('the Habitats Directive'). This is implemented in the UK via the Conservation (Natural Habitats &c.) Regulations 2010 ('the Habitats Regulations'), as amended. It is listed on Schedule 2 of the latter and is therefore a 'European Protected Species' subject to the highest level of statutory protection which is available in the UK. Some additional protection against disturbance is also conferred under the amended Wildlife and Countryside Act 1981.
- 4.4 The mature trees within the site boundary are of an age and structure that could contain features suitable for roosting bats. Prior to any work being undertaken on the mature trees within the site, a ground based assessment of their potential to support roosting bats must be made.
- 4.5 Nearly all species of bird are protected against killing or injury as individuals under UK legislation, and this protection extends to their nests, eggs and young. A number of especially rare species are subject to enhanced protection under UK law by virtue of their listing on Schedule 1 of the Wildlife & Countryside Act 1981, and may not be disturbed whilst nesting.
- 4.6 All work to remove the trees should be completed outside of the bird nesting period which is approximately March to August inclusive. Alternatively, any works which must necessarily be carried out during this period should be preceded by a survey to ensure that no nesting birds are present. This restriction also applies to any other habitats which are found to support nesting birds, including ground-nesting. Clearance and construction works must not cause disturbance or harm to any birds which are nesting in the affected habitats at the time.
- 4.7 Four native reptile species occur in South Wales, comprising common lizard, slow-worm, adder and grass snake. These four species are all afforded so-called 'partial protection' under the amended Wildlife & Countryside Act 1981, which prohibits the deliberate killing or injury of individuals. However, there is no direct protection extended to the habitats which support these species. All four common reptiles are listed as 'Priority Species' in the UK BAP and its Welsh equivalent.

*Biodiversity Enhancement Measures*

*Habitat*

- 4.8 A ditch is present along the north and western site boundary which is currently overgrown along the northern boundary in particular. Clearing the vegetation along the ditch banks and removing the arising's from site would allow a greater diversity of plants to establish. It would also help to prevent the silting up of the ditch, potentially reducing the dredging requirements in the future. However, prior to such works being undertaken all necessary permissions for works to a watercourse would need to be gained.
- 4.9 A dense stand of Japanese knotweed is present along the ditch to the northern edge of the site. Japanese knotweed is a highly invasive non-native species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such it is an offence to plant or allow this species to grow in the wild. Under the Environmental Protection Act 1990, Japanese Knotweed is classified as controlled waste. The stand of Japanese knotweed along the ditch will require treatment.
- 4.10 The Himalayan balsam present in the understory of the woodland to the south of the site would benefit from management. Himalayan balsam is a species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such it is an offence to plant or allow this species to grow in the wild.
- 4.11 It is thought likely that the balsam has spread into the site from the River Tawe. Given the likelihood of the plant to continually spread into the site from the river, caution should be exercised when deciding how to treat it. It is unlikely that Himalayan balsam will be eradicated long term from the site. As such a low cost management technique should be employed for the site. For example using volunteers to pull the plant up at the correct time of year is likely to be cheaper than buying chemicals to treat it.
- 4.12 The floral diversity within the site could be improved through on going site management. It is suggested that areas around the periphery of the site are subject to a cutting regime that is sensitive to wildlife. This would include a low frequency of cutting and the removal of all arising's from site.

*Species*

- 4.13 A ditch is present along the northern and western edge of the site. It is suggested that a number of small dams are created along the ditch in order to create areas of standing water. This will benefit a wide range of invertebrates and amphibians in the local area.
- 4.14 Alternatively, in an agreed location the banks of the ditch could be opened out and a pond area created. This would allow a larger area of still water to be created.
- 4.15 A reptile hibernacula could be created in one of the banks along the edge of the site. The hibernacula would need to be created in an area that is not likely to flood.

## 5.0 REFERENCES

**Bat Conservation Trust (BCT 2016)** *Bat Surveys – Good Practice Guidelines* (3<sup>rd</sup> Edition). Bat Conservation Trust, London.

**CIEEM (2013)** *Guidelines for Preliminary Ecological Appraisal*

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		W	NG	CG	AG	MG	PIL
<b>Trees &amp; Shrubs</b>							
<i>Acer pseudoplatanus</i>	sycamore						
<i>Aesculus hippocastanum</i>	horse chestnut						
<i>Betula pendula</i>	silver birch						
<i>Corylus avellana</i>	hazel						
<i>Fraxinus excelsior</i>	ash						
<i>Ilex aquifolium</i>	holly						
<i>Prunus spinosa</i>	blackthorn						
<i>Quercus robur</i>	pedunculate oak						
<i>Rubus fruticosus</i> agg	bramble						
<i>Ulmus procera</i>	English elm						
<b>Herbaceous Plants</b>							
<i>Agrostis stolonifera</i>	creeping bent						
<i>Anthoxanthum odoratum</i>	sweet vernal-grass						
<i>Arrhenatherum elatius</i>	false oat-grass						
<i>Bellis perennis</i>	daisy						
<i>Carex hirta</i>	hairy sedge						
<i>Carex otrubae</i>	false fox sedge						PIL
<i>Carex pendula</i>	pendulous sedge	W				MG	
<i>Centaurea nigra</i>	common knapweed		NG	CG			
<i>Cerastium fontanum</i>	common mouse-ear						
<i>Chamerion angustifolium</i>	rosebay willowherb						
<i>Circaea lutetiana</i>	enchanter's nightshade						
<i>Cirsium arvense</i>	creeping thistle						
<i>Equisetum arvense</i>	field horsetail						
<i>Eupatorium cannabinum</i>	hemp agrimony					MG	
<i>Fallopia japonica</i>	Japanese knotweed						
<i>Galium aparine</i>	cleavers						
<i>Hedera helix</i>	ivy						
<i>Heracleum sphondylium</i>	hogweed						
<i>Holcus lanatus</i>	yorkshire fog						
<i>Hypericum maculatum</i>	imperforate St John's-wort						
<i>Hypochaeris radicata</i>	common cat's-ear		NG				
<i>Impatiens glandulifera</i>	Indian balsam						
<i>Juncus articulatus</i>	jointed rush					MG	
<i>Juncus conglomeratus</i>	compact rush						
<i>Lathyrus pratensis</i>	meadow vetchling		NG				
<i>Lolium perenne</i>	perennial rye-grass						
<i>Lotus corniculatus</i>	common bird's-foot trefoil		NG			MG	PIL
<i>Mentha aquatica</i>	water mint					MG	
<i>Oenanthe crocata</i>	hemlock water dropwort					MG	
<i>Persicaria maculosa</i>	redshank						
<i>Plantago lanceolata</i>	ribwort plantain						

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<i>Poa pratensis</i>	smooth meadow-grass						
<i>Potentilla anserina</i>	silverweed						
<i>Potentilla reptans</i>	creeping cinquefoil			CG			PIL
<i>Prunella vulgaris</i>	self heal						
<i>Pteridium aquilinum</i>	bracken						
<i>Ranunculus acris</i>	meadow buttercup						
<i>Ranunculus repens</i>	creeping buttercup						
<i>Rumex crispus</i>	curled dock						
<i>Rumex obtusifolius</i>	broad-leaved dock						
<i>Senecio jacobaea</i>	common ragwort						
<i>Taraxacum officinalis</i> agg	dandelion						
<i>Torilis japonica</i>	upright hedge-parsley						
<i>Trifolium campestre</i>	hop trefoil						
<i>Trifolium pratense</i>	red clover		NG				
<i>Trifolium repens</i>	white clover						
<i>Tussilago farfara</i>	colt's-foot						PIL
<i>Urtica dioica</i>	common nettle						
<b>WBP (2008) Totals</b>		<b>1</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>6</b>	<b>4</b>

**Key**

PS - Regionally Scarce - Primary Species in SWWSP (2004)

CS - Regionally Uncommon - Contributory Species in SWWSP (2004)

**Indicator Species (SWWSP 2004)**

W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG - Acid Grassland, PMG Purple Moor Grass and Rush Pasture, PIL - Post Industrial Land, TF Species-rich Tillage Fields and Margins

**SINC Selection**

Sites which support 1 primary species or 5 contributory species or habitats which support 8 neutral grassland, 8 calcareous grassland, 7 acid grassland, 12 Purple Moor Grass and Rush Pasture or 8 tillage field and margins indicator species should be considered for selection as a SINC. Post Industrial sites which support 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should also be considered for selection.

**PHOTOGRAPHS OF THE SITE – August 2016**



View of dense Japanese knotweed stand



Ditch line along northern edge of site



View of marshy grassland to north of site



View of northern field



View of southern field



Himalayan balsam along woodland edge



Example of tall ruderal vegetation



Tree line between north and south field



View of woodland understory to west of site



- Amenity Grassland
- Tall Ruderal
- Marshy Grassland
- Fj  
Fj  
Fj Japanese Knotweed
- Planted Broadleaved Woodland
- Building
- Tarmac
- Ditch
- Himalayan Balsam
- Site Boundary
- Standard Tree

***NPTCBC Biodiversity Compensation Sites  
Recreation Grounds, Pontardawe***

***Plan 1: Phase 1 Map***

DCE 844 NTS February 2017


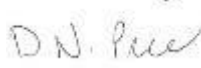
**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**

**ECOLOGICAL ASSESSMENT: YNYSDERW PARK, PONTARDAWE,  
NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd  
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH  
Tel: 029 20 350120 Fax: 029 20 711997  
[info@dce.org.uk](mailto:info@dce.org.uk)**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		07.02.17
	Dr Neil Price BSc		07.02.17
<b>Version No./Stage</b>	V1.0		

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Borough Council (NPTCBC). It sets out the results of an Extended Phase 1 Habitat survey of a parcel of land at Ynysderw Park, Pontardawe.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the east of the town of Pontardawe at NGR SN 71738 03253. The site measures approximately 14.5ha. The majority of the site consists of playing fields used by the adjacent Pontardawe Leisure Centre and local sports clubs. A narrow band of woodland, tall ruderal vegetation and semi improved grassland areas are present to the south of the park. A tarmac public footpath runs through the park along the banks of the River Tawe.
- 1.3 The River Tawe flows along the southern site boundary whilst the B4603 and a small amount of housing is present to the north. Pontardawe Leisure Centre and Cwmtawe Community School is situated to the east of the site. The settlement of Trebanos is present to the west of the site. The site is considered to be within a semi urban location with the town of Pontardawe to the east of the site.
- 1.4 NPTCBC are exploring different options to help effectively deal with ecology and biodiversity issues within the council's planning system. At present, some planning applications are having difficulty in dealing with potential biodiversity losses within the site footprint whilst achieving a viable development. Such issues tend to arise on sites where habitats have non-statutory protection and where non-European protected species are encountered. Whilst the default position of the council is that biodiversity issues are dealt with within the site footprint, some issues cannot always be accommodated. Problems then arise when developers need to find suitable off site locations to use as mitigation for any potential biodiversity impacts.
- 1.5 The Biodiversity Compensation Sites Project aims to identify, survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to benefit and enhance biodiversity. The sites would be used as mitigation for biodiversity losses experienced through the planning system.
- 1.6 The remainder of this report sets out the results of an ecological survey and assessment of the site, which was put forward by NPTCBC as a potentially suitable site for enhancement works.

### 1.7 Designated Sites of Biodiversity Interest

#### *Statutory Sites*

- 1.7.1 There are no statutory sites of nature conservation interest within 1km of the proposed development site.



*Non-statutory Sites*

- 1.7.2 ‘Sites of Importance for Nature Conservation’ (SINC) are one of a class of non-statutory nature conservation designations which are recognised throughout the UK under a wide range of titles, but which are collectively referred to as ‘Wildlife Sites’. Wildlife Sites are so-called ‘third tier’ sites, generally ranked below sites which are of international or national biodiversity significance, but which are considered to have substantive nature conservation value in the sub-national (ie regional or district) context. They are usually designated at the county or county borough level by the relevant local planning authority, and are recognised as a material planning consideration in the relevant statutory development plan. The framework for the identification and designation of ‘Wildlife Sites’ is set out in various Government documents, and is referred to in Planning Policy Wales (2017, 9th Edition) and Technical Advice Note 5: Nature Conservation & Planning (2009).
- 1.7.3 There are various SINC sites within 1km of the site. A designated watercourse SINC is present to the north east of the site, it is thought likely to be a ditch. Other similar watercourse SINCS are present across Pontardawe within 1km of the site. A woodland SINC is present to the south west of the site. Again there are other similar woodland SINC sites within 1km of the site.
- 1.7.4 Swansea Canal is a candidate SINC site present approximately 30m to the south-west of the site. There are a limited number of other candidate SINC sites within 1km of the site.
- 1.7.5 The Pontardawe Riverside Walk, which is a designated conservation verge, is present within the site boundary.

## 2.0 APPROACH AND METHODS

### 2.1 Survey Methodology

- 2.1.1 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and warm, and was subject to an extended phase 1 habitat survey/preliminary ecological appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the phase 1 vegetation classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats, which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest.
- 2.1.2 The methodology also requires the recording of conspicuous fauna species such as birds, herptiles (ie amphibians and reptiles), mammals and invertebrates such as butterflies and dragonflies, paying particular attention to the presence (or possible presence) of any rare or protected species.
- 2.1.3 Where appropriate, the habitats of the site were also characterised against the descriptions provided by the National Vegetation Classification (NVC) as set out by Rodwell (1991 *et seq*).

#### Survey Constraints

- 2.1.4 There were no constraints to this survey. The site visit was undertaken at an optimal time of year for botanical surveys and all areas of the site were fully accessible.

### 2.2 Data Trawl

- 2.2.1 In addition to the original survey, a data trawl was carried out using Neath Port Talbot County Council ecological records.

### 3.0 SURVEY RESULTS

#### 3.1 Habitats & Vegetation

3.1.1 The results of the vegetation and habitats survey are shown on Plan 1 of this report, and are described briefly below.

##### *Notable Plant Species*

3.1.2 No nationally rare or scarce species are recorded from the site.

##### *Notable Habitats*

3.1.3 Based on the current assessment none of the habitats within the site qualify as SINC habitats and or as 'Priority Habitats' of the UK Biodiversity Action Plan (UK BAP) or its Welsh equivalent.

##### *Broadleaved Woodland*

3.1.4 A narrow expanse of broadleaved woodland runs along the southern half of the site, broadly following the public footpath present within the site. Species such as sycamore (*Acer pseudoplatanus*), rowan (*Sorbus aucuparia*), alder (*Alnus glutinosa*) and hawthorn (*Crataegus monogyna*) are present.

##### *Semi-Improved Neutral Grassland*

3.1.5 Small areas of semi-improved neutral grassland are visible across the site, mainly around the edges of the mown playing fields. These areas are not subject to intensive mowing regimes and as such are more diverse than the amenity grassland. The main area of semi-improved grassland is present to the south of the site around the woodland areas.

3.1.6 Species such as Yorkshire fog (*Holcus lanatus*), false oat-grass (*Arrhenatherum elatius*), greater plantain (*Plantago major*), ribwort plantain (*Plantago lanceolata*), upright hedge parsley (*Torilis japonica*), common ragwort (*Senecio jacobaea*), creeping buttercup (*Ranunculus repens*) and common mouse ear (*Cerastium fontanum*) are present within the sward.

##### *Amenity Grassland*

3.1.7 A large expanse of amenity grassland was noted within the site boundary. Amenity grassland is the most abundant habitat on site and covers most of the northern half of the site. The grassland areas are used as playing fields for the adjacent leisure centre and Cwmtawe Community School. The grass within the fields had recently been cut making species identification difficult. However species such as daisy (*Bellis perennis*), white clover (*Trifolium repens*) and perennial sow-thistle (*Sonchus arvensis*) are present.

##### *Invasive Non-Native Species*

3.1.8 A large stand of Japanese knotweed (*Fallopia japonica*) is present along the southern edge of the site boundary. It is thought the knotweed has spread into the site from the River Tawe which flows to the south of the site.

3.1.9 Himalayan Balsam (*Impatiens glandulifera*) is also present along the southern border of the site. The balsam is scattered across the woodland and semi improved grassland areas within the site boundary.

## 3.2 Fauna

3.2.1 A broad assessment for the potential for protected species to be present was undertaken during the site visit. Based on the local species records and types of habitat found within the site boundary it was felt the below species could be present within the site:

- A small number of common bat species could use the site for foraging purposes. The River Tawe provides excellent bat foraging and commuting habitat.
- The mature trees around the site could have potential for roosting bats.
- A range of common nesting birds could use the scrub and tree lines.
- Low numbers of common reptile species.

3.2.2 It was also felt that the site has the potential for the following unprotected species:

- A range of common and ubiquitous invertebrate species.
- A small number of common synanthropic species such as hedgehog, house mouse, voles and shrews for foraging and potentially nesting.

## 4.0 RECOMMENDATIONS

- 4.1 The recommendations made within this section are a series of measures that can be implemented to improve the biodiversity of the site. If this site is taken forward as part of the Biodiversity Compensation Sites Project a full management plan for the site will be required.
- 4.2 It is recognised that the main function of the site is as a recreation space for Pontardawe Leisure Centre and Cwmtawe Community School. The below recommendations do not seek to remove or impact on any of the areas currently used for recreation purposes. The recommendations relate solely to the edges of the site boundary and areas which are currently in frequently managed.

### Statutory Requirements

- 4.3 All bat species and their roosts, are protected throughout their European range, being listed on Annex 4 of the EU Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, 1992 ('the Habitats Directive'). This is implemented in the UK via the Conservation (Natural Habitats &c.) Regulations 2010 ('the Habitats Regulations'), as amended. It is listed on Schedule 2 of the latter and is therefore a 'European Protected Species' subject to the highest level of statutory protection which is available in the UK. Some additional protection against disturbance is also conferred under the amended Wildlife and Countryside Act 1981.
- 4.4 The mature trees within the site boundary are of an age and structure that could contain features suitable for roosting bats. Prior to any work being undertaken on the mature trees within the site, a ground based assessment of their potential to support roosting bats must be made.
- 4.5 Nearly all species of bird are protected against killing or injury as individuals under UK legislation, and this protection extends to their nests, eggs and young. A number of especially rare species are subject to enhanced protection under UK law by virtue of their listing on Schedule 1 of the Wildlife & Countryside Act 1981, and may not be disturbed whilst nesting.
- 4.6 All work to remove the trees should be completed outside of the bird nesting period which is approximately March to August inclusive. Alternatively, any works which must necessarily be carried out during this period should be preceded by a survey to ensure that no nesting birds are present. This restriction also applies to any other habitats which are found to support nesting birds, including ground-nesting. Clearance and construction works must not cause disturbance or harm to any birds which are nesting in the affected habitats at the time.
- 4.7 Four native reptile species occur in South Wales, comprising common lizard, slow-worm, adder and grass snake. These four species are all afforded so-called 'partial protection' under the amended Wildlife & Countryside Act 1981, which prohibits the deliberate killing or injury of individuals. However, there is no direct protection extended to the habitats which support these species. All four common reptiles are listed as 'Priority Species' in the UK BAP and its Welsh equivalent.

*Biodiversity Enhancement Measures*

*Habitat*

- 4.8 A dense stand of Japanese knotweed is present along the southern edge of the site. Japanese knotweed is a highly invasive non-native species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such it is an offence to plant or allow this species to grow in the wild. Under the Environmental Protection Act 1990, Japanese Knotweed is classified as controlled waste. The stand of Japanese knotweed along the ditch will require treatment.
- 4.9 The Himalayan balsam present along the woodland areas to the south of the site would benefit from management. Himalayan balsam is species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such it is an offence to plant or allow this species to grow in the wild.
- 4.10 The floral diversity within the site could be improved through on going site management. It is suggested that areas around the periphery of the site are subject to a cutting regime that is sensitive to wildlife. This would include a low frequency of cutting and the removal of all arising's from site.

*Species*

- 4.11 The provision of a variety of bat boxes within trees along the southern edge of the site would provide additional roosting locations.
- 4.12 The provision of a variety of bird boxes within trees along the southern edge of the site would provide additional nesting locations.
- 4.13 A reptile hibernacula could be created in one of the banks along the edge of the site. The hibernacula would need to be created in an area that is not likely to flood.

## 5.0 REFERENCES

**Bat Conservation Trust (BCT 2016)** *Bat Surveys – Good Practice Guidelines* (3<sup>rd</sup> Edition). Bat Conservation Trust, London.

**CIEEM (2013)** *Guidelines for Preliminary Ecological Appraisal*

**Edgar, P, Foster, J & Baker, J (2010)** *Reptile Habitat Management Handbook*. Natural England/Amphibian & Reptile Conservation Trust, Bournemouth.

**Institute of Environmental Assessment (IEA 1995)** *Guidelines for Baseline Ecological Assessment*. IEA Lincoln.

**Nature Conservancy Council (NCC 1989)** *Guidelines for the Selection of Biological SSSIs*. NCC Peterborough.

**Nature Conservancy Council (NCC 1990)** *Handbook for Phase 1 Habitat Survey: a Technique for Environmental Audit*. NCC Peterborough.

**Rodwell, J (Ed) (1991-2000)** *British Plant Communities*. Vols 1-5. Cambridge University Press.

**Wales Biodiversity Partnership (WBP 2016)** *Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government.

**Froglife (1999)** *Reptile Survey : an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*

## APPENDIX 1: SPECIES RECORDED

All species recorded by DCE 2016, unless otherwise indicated:

Species	Common Name	Indicator Species					
		W	NG	CG	AG	MG	PIL
<b>Trees &amp; Shrubs</b>							
<i>Acer pseudoplatanus</i>	sycamore						
<i>Alnus glutinosa</i>	alder						
<i>Buddleja davidii</i>	buddleia						
<i>Crataegus monogyna</i>	hawthorn						
<i>Quercus robur</i>	pedunculate oak						
<i>Rubus fruticosus</i> agg	bramble						
<i>Sorbus aucuparia</i>	rowan						
<b>Herbaceous Plants</b>							
<i>Agrostis stolonifera</i>	creeping bent						
<i>Arrhenatherum elatius</i>	false oat-grass						
<i>Bellis perennis</i>	daisy						
<i>Brachypodium sylvaticum</i>	wood false-brome						
<i>Centaurea nigra</i>	Common knapweed						
<i>Cerastium fontanum</i>	common mouse-ear						
<i>Chamerion angustifolium</i>	rosebay willowherb						
<i>Fallopia japonica</i>	Japanese knotweed						
<i>Galium aparine</i>	cleavers						
<i>Heracleum sphondylium</i>	hogweed						
<i>Holcus lanatus</i>	yorkshire fog						
<i>Impatiens glandulifera</i>	Indian balsam						
<i>Lolium perenne</i>	perennial rye-grass						
<i>Lotus corniculatus</i>	common bird's-foot trefoil		NG			MG	PIL
<i>Plantago lanceolata</i>	ribwort plantain						
<i>Plantago major</i>	greater plantain						
<i>Ranunculus acris</i>	meadow buttercup						
<i>Ranunculus repens</i>	creeping buttercup						
<i>Senecio jacobaea</i>	Common ragwort						
<i>Sonchus arvensis</i>	perennial sow-thistle						
<i>Torilis japonica</i>	upright hedge-parsley						
<i>Trifolium pratense</i>	red clover						
<i>Trifolium repens</i>	white clover						
<b>WBP (2008) Totals</b>		<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>

### Key

PS - Regionally Scarce - Primary Species in SWWSP (2004)

CS - Regionally Uncommon - Contributory Species in SWWSP (2004)

### Indicator Species (SWWSP 2004)

W - Woodland, NG - Neutral Grassland, CG - Calcareous Grassland, AG - Acid Grassland, PMG Purple Moor Grass and Rush Pasture, PIL - Post Industrial Land, TF Species-rich Tillage Fields and Margins

### SINC Selection

Sites which support 1 primary species or 5 contributory species or habitats which support 8 neutral grassland, 8 calcareous grassland, 7 acid grassland, 12 Purple Moor Grass and Rush Pasture or 8 tillage field and margins indicator species should be considered for selection as a SINC. Post Industrial sites which support 20 or more indicator species from the combined post-industrial land, acid, neutral, calcareous and marshy grassland lists should also be considered for selection.



**PHOTOGRAPHS OF THE SITE – August 2016**



View of the amenity grassland areas



View of Japanese knotweed to south of site



Himalayan Balsam along woodland areas



Tarmac footpath along southern edge of site



View of semi-improved grassland area



## **APPENDIX 2      Environmental Management Plans**


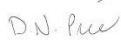
**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**

**ECOLOGICAL MANAGEMENT PLAN (EMP):  
LAND AT ABERCREGAN, CYMMER, NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd  
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH  
Tel: 029 20 350120 Fax: 029 20 711997  
[info@dce.org.uk](mailto:info@dce.org.uk)**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		15.02.17
<b>Checked by:</b>	Dr Neil Price BSc MSc PhD MCIEEM		14.02.17
<b>Version No./Stage</b>	v 1.0		

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Council (NPTCBC) and refers to a parcel of land at Abercregan, Cymmer (SS 84870 96519). This document sets out an Ecological Management Plan (EMP) for the on-going management and enhancement of retained and new features of wildlife and conservation significance.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the south of the settlement of Abercregan and measures approximately 0.45ha. The site consists of bracken, acid grassland and a tree line along the north and eastern site boundary. The site is roughly oval in size and relatively flat but with a short slope along the northern boundary of the site.
- 1.3 A small amount of housing is situated to the north of the site with the Afan Valley Cycle Way running along the northern boundary. A small amount of broadleaved woodland is present immediately to the east, west and south of the site. A small stream is visible down a steep bank to the east of the site. The wider landscape is rural in nature with hills, fields and woodland in the area.
- 1.4 The site is being considered as a potential compensation site as part of a proposed Biodiversity Compensation Project led by Neath Port Talbot County Borough Council. The Biodiversity Compensation Sites Project aims to identify survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to both benefit and enhance biodiversity. The sites will be used as mitigation for biodiversity losses experienced through the planning system which cannot be avoided or adequately mitigated for within the site boundary.
- 1.5 This Ecological Management Plan (EMP) is written so that each management aim can be undertaken when funds become available via the planning system. An indicative costing for the works to undertake each management aim is provided in section 2.0. A developer can then be matched with one or more management aims depending on the scale of their unavoidable biodiversity impacts via development works. In the first instance a developer must be matched to implement a management aim the same as the habitat they are losing through the proposed works. If a direct match is not possible then a similar habitat to that being lost must be implemented. In exceptional circumstances NPTCBC may accept implementation of a management aim that is not similar to the habitat being lost. Demonstration of why a similar habitat cannot be created must be provided by the developer.

### *Ecological Survey & Assessment*

- 1.6 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and still, and was subject to a reconnaissance Phase 1 survey/Preliminary Ecological Appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the Phase 1 vegetation classification methodology developed by the former Nature Conservancy Council

(current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and 'target notes' were prepared for any features of particular interest. A detailed report of the Phase 1 survey is provided separately within the David Clements Ecology Report (2016).

### **Aims & Constraints**

- 1.7 The main aim of the management works within the grassland areas is to increase species diversity through sensitive management rather than managing the grassland for specific species. Through such management techniques plant species that naturally flourish will establish in their preferred habitat conditions. For example marshy grassland species will naturally succeed in wetter areas compared to neutral grassland species.
- 1.8 It is proposed to use low density pony grazing to improve the floral diversity of the grassland habitats. Grazing and the movement of cattle is strictly regulated and subject to a number of controls. In order to adhere to best practice and current legislation the use of a grazing organisation is strongly recommended. In Wales, PONT is a not-for-profit organisation that helps to promote grazing regimes for the benefit of wildlife. In order for the project to benefit from the knowledge and experience that PONT has on grazing, advice on costs on the potential grazing at site has been sought from PONT. If the project progresses it is proposed that PONT will be a key partner in achieving the aims of this EMP.
- 1.9 The site is currently subject to unauthorised grazing and appears to suffer from over grazing with the grassland sward being very short. Measures will need to be undertaken to prevent unauthorised access into the site. Signage should be erected to explain the aims of the sensitive grazing. The use of keen local people as volunteer stock checkers is also an enjoyable way to engage with the local community.
- 1.10 The provision of a section of dry stone walling along the south facing bank within the site would provide additional habitat for local invertebrate and reptile populations. The walling will be used to face current slope.
- 1.11 A general enhancement measure which would benefit the species likely to use the site would be the provision of bat and bird boxes. However, all the mature trees suitable for such boxes appear to lie outside the site boundary. As such, it is not recommended as part of this EMP that bat or bird boxes are used.

## 2.0 MANAGEMENT AIMS & METHODS

The below sections detail the aims of this management plan for each habitat type, noted within the phase 1 survey DCE Ltd (2016), that would benefit from sensitive ecological management.

### 2 A) Dry Stone Walling

- A section of traditional dry stone walling, without any cement fill, will be created along the slope to the north of the site. The wall will measure approximately 50m long and will be 1m high. The walling will be used to face the current slope and will be used as a habitat feature rather than a retaining wall. As such it is not anticipated that the wall will have to be built to a high quality specification.
- The wall will offer habitat to a variety of species but the primary aim is to enhance the site for reptile species. The exact design of the wall will have to be agreed with the contractor undertaking the work. However the wall will be a minimum of 50m long and 1m high. The exact materials can be agreed with the NPTCBC ecologists closer to the time the works will take place.
- The dry stone wall will be created in year 1 once the s106 has been agreed. The location of the wall is shown on Plan 1.

### 2 B ) Fencing and Access Gate

- The current fencing around the site boundary is considered to be in a poor state of repair and will require replacement to ensure that the site is stock proof. A new gate will also be required for the site to prevent unauthorised stock access.
- The current fencing and mix of cement and wooden fence posts will be removed, taken away from site and disposed of at a correct waste facility. Approximately 300m of fencing is required around the entire site perimeter.
- A new five bar heavy duty galvanised gate and lock with vandal proof hanging will also be required. The gate must have weld mesh and two heavy duty locks and chains.
- The fencing and gate will be installed in year 1 once the s106 has been agreed

### 2 C) Stock Grazing

- A small amount of scrub, bracken and Himalayan balsam is encroaching into the site. This habitat is mainly restricted to the edges of the site. A single cut during the spring months (March/April) will be undertaken to have maximum impact on Himalayan balsam. The cut will reduce the amount of scrub prior to grazing. It is anticipated that grazing will prevent scrub from re-establishing within the site boundary.
- The dominance of rush within the site needs to be reduced to create better quality grazing and increase the diversity of grassland species. This will be achieved through



topping across the grassland areas of the site. Rush dominated areas will be subject to two manual cuts in year 1 once the s106 has been agreed.

- The site will be subjected to pony grazing for four months of the year. A maximum of two ponies will be allowed to graze between the months of July and October inclusive.
- The exact age and type of pony will be left to the grazier's digression.
- PONT will be used to liaise with local graziers to secure suitable grazing at the agreed time of year at site. PONT will also be used to monitor grazing for the lifetime of the management plan to ensure it adheres to what is agreed and detailed within this document.

#### **2 D) Signage**

- A sign will be placed at the entrance gate on the northern site boundary. The sign will provide details to the public on the aims of grazing across the site. It will also provide information on the species currently present and what species the management works will improve the site for. The signage will be agreed in writing with the NPTCBC ecologists and PONT.

#### **2 E) Stock Water Source**

- There is currently no suitable water source for stock within the site. A potential water mains connection point was noted approximately 5m to the North West of the site at a small pumping station. It is anticipated that a connection from this station into the site could be gained to provide a suitable water source for stock.
- An application to Dwr Cymru will be required for the connection to be installed to the site boundary. At the site boundary a trough and ball cock will be fitted. The approximate location of the water source is shown on Plan 1.

### **3.0 SITE MONITORING**

Monitoring of the work completed under the EMP will be required to provide an evidence base that the management works are improving biodiversity within the site. Monitoring of species abundance and population size within the site and the condition of habitats which have been managed to improve the biodiversity will be required.

Each management aim will require a different level of monitoring. The monitoring requirements for each management aim are detailed below.

#### **3 A) *Dry Stone Walling***

- If a developer chooses to create the dry stone wall and translocate a reptile population to the site a scheme of monitoring will be required. Monitoring of the grassland will include a refugia survey of the areas of site suitable for reptiles to be present.
- Reptile monitoring is recommended in years 1, 3 and 5 once the s106 has been agreed and a reptile population translocated. Refugia surveys are best carried out between the months of April and September inclusive.

#### **3 B) *Fencing and Access Gate***

- Fencing and the new access gate will be monitored annually during a PONT staff member visit once the s106 has been agreed and the EMP implemented.

#### **3 C) *Stock Grazing***

- An National Vegetation Classification (NVC) survey of the grassland areas will be required. 20 quadrats across the site will be chosen and their position marked using a GPS device. This will ensure that the same quadrat locations can be monitored during each visit. Standard NVC survey techniques, as detailed within the National Vegetation Classification: Users Handbook (2006) will be used.
- Grassland monitoring is recommended in years 2 and 4 once the s106 has been agreed and the EMP implemented.
- Monitoring of the stock grazing will be required each year to ensure it adheres to what is agreed under this EMP and to ensure the health and welfare of any stock on site is being maintained. A site visit by a PONT member of staff will be undertaken four times a year.
- Grazing monitoring is recommended four times annually once the s106 has been agreed and the EMP implemented.

#### **3 D) *Signage***

- Signage will be monitored annually during a PONT staff member visit once the s106 has been agreed and the EMP implemented.

**3 E)     *Stock Water Source***

- The trough and associated fittings will be monitored annually during a PONT staff member visit once the s106 has been agreed and the EMP implemented.

#### 4.0 BIODIVERSITY ENHANCEMENT WORK COSTS

4.1 A range of indicative costs are provided below for the works to undertake the actual physical works to create some of the management aims for the site. Costs are also provided for the on-going management of each management aim for the 5 year period of the EMP. Monitoring on the physical and management works is also required to ensure the works are having a positive impact on wildlife and biodiversity. Therefore costs for a range of monitoring techniques are also provided within this section.

4.2 The costs within table 1 and 2 are index linked and as such will be subject to inflation and interest costs. The exact figures for inflation and interest will be calculated by the developer and finalised through the s106 agreement.

4.3 The VAT costs included within all calculations below are based on a 20% rate.

#### 4.4 *Physical & Management Work Costs*

- ***Dry Stone Walling***

Stone Supply – (costs are provided by Ecovigour Ltd)

Maximum cost £180/tonne. Expected 1.5 tonne/metre of wall = £270/metre  
 £270 x 50m = £13,500

Stone Laying – (costs provided by Ecovigour Ltd)

50m x £50/m<sup>2</sup> = £2,500

Total costs = £19,200 incl VAT

- ***Fencing and Access Gate***

Fencing Provision – (costs are provided by PONT)

300m x £8/m = £2,400

Access Gate – (costs are provided by PONT)

1 x access gate, fitting and locks = £500

Total Costs = £3,480 incl VAT

- ***Stock Grazing***

Scrub Clearance– (costs are provided by PONT)

Cut 1 x Year 1 = £250

Grazier Payment – (costs are provided by PONT)

Provision of grazing 3months/year = £400/year

Total costs for 5 year period = £2,700 incl VAT

- **Signage**

Provision of Signage – (costs provided by PONT)

1 x sign = £400

Total costs = £480 incl VAT

- **Stock Water Source**

Connection to Water Mains – (costs provided by PONT)

Application to Dwr Cymru = £1,500

Installation of Trough – (costs provided by PONT)

Installation of trough & fittings = £250

Total costs = £2,100 incl VAT

#### 4.5 Monitoring Work Costs

- **Reptile Refugia**

An artificial refugia survey across the site is proposed to monitor reptile populations. Refugia survey to include a survey visit to set out reptile refugia and seven subsequent site visits to check refugia. The below costs do not include mileage costs.

Survey cost per year = £816.00 (incl VAT). Monitoring is proposed in years 1, 3 and 5 from the agreement of the s106 agreement. The costs do not include mileage.

Total Costs = £2,448.00 incl VAT

- **Stock Grazing – NVC Survey, PONT Supervision & Liason**

NVC survey of site = 1 day @ £455.00

Analysis/report of findings to include GPS location of quadrats = £325.00

Costs per year – £936.00 (incl VAT). Monitoring is proposed in years 2 and 4 from the agreement of the s106 agreement. The costs do not include mileage.

*Costs - £1,872.00 (incl VAT)*

A PONT member of staff will visit site four times each year to check that he grazing adheres to what is agreed through the EMP. A visual check of the pond, kraal and signage will also be undertaken as and when these aspects of the EMP are implemented.

*Costs for 5 year period of EMP - £6,240 (incl VAT)*

Total Costs of Stock Grazing Monitoring = £8,632 (incl VAT)

## 4.6 Total Costs for Each Management Aim and Monitoring

4.6.1 Table 1 collates all the costs given in sections 4.4 and 4.5 above. In order to ensure the longevity of the EMP, the project needs to have some benefit for the landowner. By managing a site for biodiversity in the long term there is little scope to make any other economic benefit from the land. It is suggested that by charging a nominal fee on the costs of the proposed management works, the security of the site in the long term will be achieved. The small fee may also encourage private landowners to enter into the scheme.

4.6.2 A land fee of 10% of the total physical, management and monitoring works is proposed for each year for the 5 year period of the EMP.

Table 1 – Overall Project Costs

Type of Work	Physical Works	Management Works	Monitoring Works	Total cost for EMP period	Land fee at 10% for 5 yr EMP	Total Fee
<b>Dry Stone Wall</b>	£19,200.00	-	£2,448.00	£21,648.00	£10,824.00	<b>£32,472.00</b>
<b>Fencing &amp; New Access Gate</b>	£3,480.00	-	-	£3,480.00	£1,740.00	<b>£5,220.00</b>
<b>Stock Grazing</b>	-	£2,700.00	£8,632.00	£11,332.00	£5,666.00	<b>£16,998.00</b>
<b>Signage</b>	£480.00	-	-	£480.00	£240.00	<b>£720.00</b>
<b>Stock Water Source</b>	£2,100.00	-	-	£2,100.00	£1,050.00	<b>£3,150.00</b>

4.6.3 The management and monitoring costs will need to be agreed during the negotiations of the s106 agreement and last for the 15 year period of the EMP. Although the EMP may be reviewed and amended it is expected that the broad management works for the habitat type will stay the same. Table 2 contains the management and monitoring costs required for the 6 – 15 year period of the site management agreed as part of the s106 agreement. A cost of 10% of the initial physical works has been allowed for fencing, signage and water source to cover any repair works which may be required over the long term.

Table 2 – 6 -15 year Costs

Type of Work	Management Works	Monitoring Works	Land fee at 10% for remaining EMP life	Total Fee
<b>Dry Stone Wall</b>	-	£2,448.00	£6,120.00	<b>£8,568.00</b>
<b>Fencing &amp; New Access Gate</b>	£348.00	-	£348.00	<b>£348.00</b>
<b>Stock Grazing</b>	£5,400.00	£17,264.00	£22,664.00	<b>£45,328.00</b>
<b>Signage</b>	£48.00	-	£48.00	<b>£48.00</b>
<b>Stock Water Source</b>	£210.00	-	£210.00	<b>£210.00</b>

## 5.0 SITE MANAGEMENT & RESPONSIBILITIES

### *Site Management*

- 5.1 Any work carried out as part of this management plan will be subject to on-going management and maintenance for a minimum period of 15 years. An EMP will be written for a 5 year period for the site. At the end of the 5 year period, the management plan will be reviewed in consultation with the NPTCBC ecologists, landowner and any independent ecological advice deemed necessary. Any amendments to the EMP will be informed by the monitoring and long term management aims agreed with the landowner, NPTCBC ecologists and any relevant independent advice. The reviewed, and where necessary amended, EMP will be issued for the next 5 year period. This will continue for the length of the s106 agreement for the site.
- 5.2 The management of the site is the responsibility of the land owner and will be ‘in perpetuity’ although the s106 agreement will cover a minimum period of 15 years. The developer will pay the agreed sum for each aspect of work they wish to carry out. The developer will then implement the actual physical works as detailed in section 3 within the site boundary. The on-going management and monitoring of the site will be undertaken by the landowner.
- 5.3 The management and monitoring will be reviewed and revised at 5-yearly intervals as detailed in section 5.1. Adequate resources will be made available by the developer and held by the landowner to ensure that all elements of management and monitoring, in accordance with the EMP, will be delivered in perpetuity. These resources will be agreed through an s106 agreement with the landowner.
- 5.4 A table detailing the proposed works and monitoring for each management aim is provided in Appendix 1. The table links to section 2 and 3 and details what management aim and monitoring works will be undertaken at what time for a 5 year period.

## 6.0 REFERENCES

**David Clements Ecology (2016)** *Biodiversity Compensation Sites Project Ecological Assessment: Land at Abercregan, Cymmer, Neath Port Talbot*

**Froglife (1999)** *Reptile Survey: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation*. Froglife Advice Sheet No. 10. Froglife, Halesworth.

**Griffiths, R A & Inns, H (1998)** *Surveying In: Gent, A & Gibson, S (Eds.) Herpetofauna Workers' Manual*. Joint Nature Conservation Committee.

**Joint Nature Conservation Committee (JNCC 2006)** *National Vegetation Classification: Users' Handbook* John S. Rodwell

**Peterken, G.F. (1981)** *Woodland Conservation and Management*

**United Kingdom Steering Group (UKSG 1995)** *Biodiversity: The UK Steering Group Report*. Vols 1-2. HMSO, London.

**Wales Biodiversity Partnership (WBP 2016)** *Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government.









**APPENDIX 1: TIMING OF WORKS (PRE & DURING CONSTRUCTION)**

**Table 1: showing suitable time for carrying out works in relation to protected species**

Management Areas/Tasks	Year of Return	Year 1						Year 2						Year 3						Year 4						Year 5						Method							
		J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D								
<b>DRY STONE WALLING</b>																																							
Pond Creation incl excavation	Year 1																																					2 A	
Monitoring of wall	Annual																																					3 A	
<b>FENCING &amp; NEW ACCESS GATE</b>																																							
Installation of fencing & Gate	Year 1																																					2 B	
Monitoring of Fencing	Annual																																				3 B		
<b>STOCK GRAZING</b>																																							
Scrub Clearance	Year 1																																					2 C	
Grazing of grassland	Annual																																					2 C	
NVC Monitoring of Grassland	Years 2 & 4																																					3 C	
PONT monitoring	Annual																																			3 C			
<b>SIGNAGE</b>																																							
Installation of signage	Year 1																																						2 D
Monitoring of signage	Annual																																				3 D		
<b>STOCK WATER SOURCE</b>																																							
Connection to water mains & installation of trough	Year 1																																						2 E
Monitoring of trough & fittings	Annual																																				3 E		





-  Signage Location
-  Water Source Location
-  Fencing Location
-  Gate Location
-  Dry Stone Walling
-  Site Boundary

***NPTCBC Biodiversity Compensation Sites  
Land at Abercregan, Cymmer***

***Plan 1: Mitigation Measure Locations***

*DCE 844*

*NTS*

*Feb 2017*


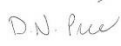
**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**

**ECOLOGICAL MANAGEMENT PLAN (EMP):  
LAND AT MARCH HWYEL, RHOS, NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd  
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH  
Tel: 029 20 350120 Fax: 029 20 711997  
[info@dce.org.uk](mailto:info@dce.org.uk)**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		22.02.17
<b>Checked by:</b>	Dr Neil Price BSc MSc PhD MCIEEM		17.02.17
<b>Version No./Stage</b>	v 1.0		

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Council (NPTCBC) and refers to a parcel of land off March Hwyel, Rhos (SN 74155 03215). This document sets out an Ecological Management Plan (EMP) for the on-going management and enhancement of retained and new features of wildlife and conservation significance.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the east of the settlement of Rhos, Pontardawe and measures approximately 2.8ha. The site consists of marshy grassland, neutral grassland, tree line and areas of scrub. The site is roughly rectangular in shape and slopes gently from the north to south of the site. A footpath runs horizontally across the site on a west to east axis which roughly splits the site into two fields.
- 1.3 Residential housing is present to the west of the site with open fields and hedgerows to the north, east and south. An area of amenity grassland and playing fields lie adjacent to the south west corner of the site. The wider landscape is rural in nature consisting mainly of fields, hedgerows and small areas of woodland. The River Clydach is present approximately 500m to the east of the site.
- 1.4 The site is being considered as a potential compensation site as part of a proposed Biodiversity Compensation Project led by Neath Port Talbot County Borough Council. The Biodiversity Compensation Sites Project aims to identify survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to both benefit and enhance biodiversity. The sites will be used as mitigation for biodiversity losses experienced through the planning system which cannot be avoided or adequately mitigated for within the site boundary.
- 1.5 This Ecological Management Plan (EMP) is written so that each management aim can be undertaken when funds become available via the planning system. An indicative costing for the works to undertake each management aim is provided in section 2. A developer can then be matched with one or more management aims depending on the scale of their unavoidable biodiversity impacts via development works. In the first instance a developer must be matched to implement a management aim the same as the habitat they are losing through the proposed works. If a direct match is not possible then a similar habitat to that being lost must be implemented. In exceptional circumstances NPTCBC may accept implementation of a management aim that is not similar to the habitat being lost. Demonstration of why a similar habitat cannot be created must be provided by the developer.

### *Ecological Survey & Assessment*

- 1.6 The site was surveyed on 16<sup>th</sup> June 2016 in good weather, being dry and still, and was subject to a reconnaissance Phase 1 survey/Preliminary Ecological Appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the Phase 1 vegetation

classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest. A detailed report of the Phase 1 survey is provided separately within the David Clements Ecology Report (DCE, 2016).

### **Aims & Constraints**

- 1.7 The aim of the management works within the grassland areas is to increase species diversity through sensitive management rather than managing the grassland for specific species. Through such management techniques plant species that naturally flourish will establish in their preferred habitat conditions. For example marshy grassland species will naturally succeed in wetter areas compared to neutral grassland species.
- 1.8 It is proposed to use cattle to graze the site and improve the floral diversity of the grassland habitats. Grazing and the movement of cattle is strictly regulated and subject to a number of controls. In order to adhere to best practice and current legislation the use of a grazing organisation is strongly recommended. In Wales, PONT is a not-for-profit organisation that helps to promote grazing regimes for the benefit of wildlife. In order for the project to benefit from the knowledge and experience that PONT has on grazing, advice on costs on the potential grazing at site has been sought from PONT. If the project progresses it is proposed that PONT will be a key partner in achieving the aims of this EMP.
- 1.9 The site is well used by dog walkers and members of the general public. The commencement of grazing within the site may cause some concern to local people. It is important to engage with the public on the issue in an effort to ease any concerns and potentially encourage any keen volunteers. Signage should be erected at key locations to explain the aims of the grazing. The use of keen local people as volunteer stock checkers is also an enjoyable way to engage with the local community.
- 1.10 A general enhancement measure which would benefit the species likely to use the site would be the provision of bat and bird boxes. However, all the mature trees suitable for such boxes appear to lie outside the site boundary. As such, it is not recommended as part of this EMP that bat or bird boxes are used.

## 2.0 MANAGEMENT AIMS & METHODS

The below sections detail the aims of this management plan for each habitat type, noted within the phase 1 survey (DCE, 2016), that would benefit from sensitive ecological management.

### 2 A) Pond Creation

- A pond will be created to the west of the site (as shown on Plan 1) in a location where it appears a pond was previously present. The area is scrubbed over and although wet, does not appear to hold water at present. A brush cutter and or chainsaw will be used to remove the scrub covering the pond footprint. All cuttings will be used to create a habitat pile within the site boundary.
- A small digger (3 tonne) will be used to dig out the dimensions of the pond. The pond will have a maximum depth of 0.5m with gently sloping edges for the safety of animals and the public. Due to the presence of grazing cattle on site it is not proposed to use a pond liner. Given the wet habitat on site, it is thought highly likely that the pond will retain water once filled from rain water.
- The pond will not be planted with aquatic vegetation. It will be allowed to naturally re-vegetate and establish with plants from the locale. The pond will also not be stocked with fish.
- All pond clearance works will be undertaken during the winter (November to January) to avoid disturbing amphibians and nesting birds. An excavator may be required if large amounts of silt are removed. This will need to be a tracked excavator with hinged arm than can swivel 360 degrees.
- The pond will be assessed by an ecologist in year 5 once the s106 has been agreed and the pond creation implemented. If pond clearance is deemed necessary, no more than 50% of the pond area will be cleared at any one time. The clearance will include vegetation removal from within the pond, pond edges and de-siltation of the pond floor. All sediment and vegetation removed from pond will be left on the bank side for 24hrs to allow any fauna to escape back into the pond. The sediment and vegetation will then be removed from the site and disposed of appropriately.

### 2 B) Reptile Refugia

- At least 1 reptile refugium will be constructed within the site boundary – see Plan1. A 2m by 2m section of neutral grassland, to the north of the site, will be removed and a reptile refugium will be created. The soil and turf removed can be used to cover over the created refugium.
- Reptile refugia, which provide shelter to both hibernating and active reptiles, can be produced by assembling a range of materials such as cut timber, brash, inert hardcore, bricks, rocks, grubbed up tree roots or building rubble, in a sunny sheltered area which is well connected to other suitable reptile habitat. The refugia must have a diverse structure for example by creating a compacted core, with more loose outer layers,



ensuring that larger cavities are filled with smaller materials such as wood chippings or topsoil. Materials that will decompose should not be placed beneath heavy components such as bricks or rocks, to avoid risk of collapse. Access points will be located around the edges, for example by ensuring timber protrudes from the sides. Turf (or vegetated top soil) should be used to cover the final construction and where this is not possible, should be seeded with a meadow mix. It is also possible to add materials, brash, timber etc, into an existing pit rather than creating a mound. To avoid flooding, these must not be created where soils are impermeable or in low lying areas. Drainage can be provided for example through the addition of gravel and slotted pipes within the structure. Detailed illustrations are included in Appendix 2.

- The reptile refugia will be created in year 1 once the s106 has been agreed. Refugia can be created through manual labour and the use of volunteers. However, for the purpose of this document it is assumed that the refugia will be created with machinery and surplus materials from the site such as brash and rubble.

## **2 C ) Cattle Grazing**

- The dominance of rush within the site needs to be reduced to create better quality grazing and increase the diversity of grassland species. This will be achieved through topping across the grassland areas of the site. Rush dominated areas will be subject to two manual cuts in year 1 once the s106 has been agreed. The first cut will be undertaken during spring time (late April or early May). A period of grazing across the site will be undertaken during the summer months. A second manual cut will then be undertaken during the autumn (September and October).
- The site will be subjected to cattle grazing for three months of the year. A maximum of three steers will be allowed to graze between the months of June and September inclusive. The use of steers will be required due to the potential presence of neosporosis within the site. The exact age and type of cattle will be left to the grazier's digression.
- PONT will be used to liaise with local graziers to secure suitable grazing at the agreed time of year at site. PONT will also be used to monitor grazing for the lifetime of the management plan to ensure it adheres to what is agreed and detailed within this document.
- When cattle are moved between sites they require TB testing. Given the length of time cattle will be on the site, it is understood TB testing will be required when they arrive and leave the site. PONT advice will be followed on TB testing procedures and the grazier will be expected to follow the advice given by PONT.

## **2 D) Cattle Kraal**

- A cattle handling pen (kraal) would be beneficial within the site to help with loading/unloading stock and health checks. A kraal will be built by an agreed contractor to a specification agreed in writing with NPTCBC ecologists and PONT.

**2 E) Signage**

- A sign will be placed at the footpath entrance gates on the east and western site boundaries, making two signs in total. The signs will provide details to the public on the aims of grazing across the site. It will also provide information on the species currently present and what species the management works will improve the site for. The signage will be agreed in writing with the NPTCBC ecologists and PONT.

### 3.0 SITE MONITORING

Monitoring of the work completed under the EMP will be required to provide an evidence base that the management works are improving biodiversity within the site. Monitoring of species abundance and population size within the site and the condition of habitats which have been managed to improve the biodiversity will be required.

Each management aim will require a different level of monitoring. The monitoring requirements for each management aim are detailed below.

#### 3 A) *Pond Creation*

- A pond has been created to provide a water source for grazing cattle. The pond is likely to have some benefit to biodiversity; however that is not its primary function. Monitoring of the pond will be restricted to a yearly visual assessment of whether or not it holds water for grazing stock in the summer months and to ensure vegetation is not encroaching and reducing the amount of water the pond can hold.
- Pond monitoring will be undertaken annually during a PONT staff member visit once the s106 has been agreed and the EMP implemented.

#### 3 B) *Reptile Refugia*

- If a developer chooses to create a reptile refugium and translocate a reptile population to the site a scheme of monitoring will be required. Monitoring will include a refugia survey of the areas of site suitable for reptiles to be present.
- Reptile monitoring is recommended in years 1, 3 and 5 once the s106 has been agreed and a reptile population translocated. Refugia surveys are best carried out between the months of April and September inclusive.

#### 3 C) *Effects of Cattle Grazing*

- An National Vegetation Classification (NVC) survey of the grassland areas will be required. 20 quadrats across the site will be chosen and their position marked using a GPS device. This will ensure that the same quadrat locations can be monitored during each visit. Standard NVC survey techniques, as detailed within the National Vegetation Classification: Users Handbook (2006) will be used.
- Grassland monitoring is recommended in years 2 and 4 once the s106 has been agreed and the EMP implemented.
- Monitoring of the cattle grazing will be required each year to ensure it adheres to what is agreed under this EMP and to ensure the health and welfare of any stock on site is being maintained. A site visit by a PONT member of staff will be undertaken four times a year.
- Grazing monitoring is recommended four times annually once the s106 has been agreed and the EMP implemented.

**3 D)     *Cattle Kraal***

- The kraal will be monitored annually to check the structure and ensure it is safe. A visual inspection will be undertaken and if the pen has suffered from damage, the damage will be recorded and fixed as soon as possible.

**3 E)     *Signage***

- Signage will be monitored annually during a PONT staff member visit once the s106 has been agreed and the EMP implemented.

#### 4.0 BIODIVERSITY ENHANCEMENT WORK COSTS

4.1 A range of indicative costs are provided below for the works to undertake the actual physical works to create some of the management aims for the site. Costs are also provided for the on-going management of each management aim for the 5 year period of the EMP. Monitoring on the physical and management works is also required to ensure the works are having a positive impact on wildlife and biodiversity. Therefore costs for a range of monitoring techniques are also provided within this section.

4.2 The costs within table 1 and 2 are index linked and as such will be subject to inflation and interest costs. The exact figures for inflation and interest will be calculated by the developer and finalised through the s106 agreement.

4.3 The VAT costs included within all calculations below are based on a 20% rate.

#### 4.4 *Physical & Management Work Costs*

##### *Pond Creation*

- Pond Creation Works– (costs are provided by PONT)  
Pond Creation = £400
- De-siltation – (costs are provided by Ecovigour Ltd)  
2.8 tonne mini digger & driver hire/ day = £360/day

Total costs = £912 incl VAT

##### *Reptile Refugia*

- Refugia Creation – (costs are provided by Ecovigour Ltd)  
2.8 tonne mini digger & driver hire/ day = £360/day

Total costs = £432 incl VAT

##### *Cattle Grazing*

- Rush Clearance– (costs are provided by PONT)  
Topping = £250/day  
Cut 2x Year 1 = £500

Grazier Payment – (costs are provided by PONT)  
Provision of grazing 3months/year = £400/year  
TB Testing of cattle = £300/year

Total costs for 5 year period = £4,800 incl VAT

##### *Cattle Kraal*

- Creation of cattle handling pen – (costs are provided by PONT)  
Cattle Kraal = £3,600 incl VAT

***Signage***

- Provision of Signage – (costs provided by PONT)  
2 x signs = £400

Total costs = £480 incl VAT

#### **4.5 Monitoring Work Costs**

- ***Reptile Refugia***

An artificial refugia survey across the site is proposed to monitor reptile populations. Refugia survey to include a survey visit to set out reptile refugia and seven subsequent site visits to check refugia. The below costs do not include mileage costs.

Survey cost per year = £816.00 (incl VAT). Monitoring is proposed in years 1, 3 and 5 from the agreement of the s106 agreement. The costs do not include mileage.

Total Costs = £2,448.00 incl VAT

- ***Cattle Grazing – NVC Survey, PONT Supervision & Liason***

NVC survey of site = 1 day @ £455.00

Analysis/report of findings to include GPS location of quadrats = £325.00

Costs per year – £936.00 (incl VAT). Monitoring is proposed in years 2 and 4 from the agreement of the s106 agreement. The costs do not include mileage.

*Costs - £1,872.00 (incl VAT)*

A PONT member of staff will visit site four times each year to check that he grazing adheres to what is agreed through the EMP. A visual check of the pond, kraal and signage will also be undertaken as and when these aspects of the EMP are implemented.

*Costs for 5 year period of EMP - £6,240 (incl VAT)*

Total Costs of Cattle Grazing Monitoring = £8,632 (incl VAT)

#### 4.6 Total Costs for Each Management Aim and Monitoring

4.6.1 Table 1 collates all the costs given in sections 4.4 and 4.5 above. In order to ensure the longevity of the EMP, the project needs to have some benefit for the landowner. By managing a site for biodiversity in the long term there is little scope to make any other economic benefit from the land. It is suggested that by charging a nominal fee on the costs of the proposed management works, the security of the site in the long term will be achieved. The small fee may also encourage private landowners to enter into the scheme.

4.6.2 A land fee of 10% of the total physical, management and monitoring works is proposed for each year for the 5 year period of the EMP.

Table 1 – Overall Project Costs

Type of Work	Physical Works	Management Works	Monitoring Works	Total cost for EMP period	Land fee at 10% for 5 yr EMP	Total Fee
<b>Pond Creation</b>	£912.00	-	-	£912.00	£456.00	<b>£1,368.00</b>
<b>Reptile Refugia Creation</b>	£432.00	-	£2,448.00	£2,880.00	£1,440.00	<b>£4,320.00</b>
<b>Cattle Grazing</b>	-	£4,800.00	£8,632.00	£13,432.00	£6,716.00	<b>£20,148.00</b>
<b>Cattle Kraal</b>	£3,600.00	-	-	£3,600.00	£1,800.00	<b>£5,400.00</b>
<b>Signage</b>	£480.00	-	-	£480.00	£240.00	<b>£720.00</b>

4.6.3 The management and monitoring costs will need to be agreed during the negotiations of the s106 agreement and last for the 15 year period of the EMP. Although the EMP may be reviewed and amended it is expected that the broad management works for the habitat type will stay the same. Table 2 contains the management and monitoring costs required for the 6 – 15 year period of the site management agreed as part of the s106 agreement. A cost of 10% of the initial physical works has been allowed for pond, cattle kraal and signage maintenance which may be required over the long term.

Table 2 – 6 -15 year Costs

Type of Work	Management Works	Monitoring Works	Land fee at 10% for remaining EMP life	Total Fee
<b>Pond Creation</b>	£91.20	-	£91.20	<b>£91.20</b>
<b>Reptile Refugia Creation</b>	-	£4,976.00	£4,976.00	<b>£9,952.00</b>
<b>Cattle Grazing</b>	£9,600.00	£17,264.00	£26,864.00	<b>£26,864.00</b>
<b>Cattle Kraal</b>	£360.00	-	£360.00	<b>£360.00</b>
<b>Signage</b>	£48.00	-	£48.00	<b>£48.00</b>

## 5.0 SITE MANAGEMENT & RESPONSIBILITIES

### *Site Management*

- 5.1 Any work carried out as part of this management plan will be subject to on-going management and maintenance for a minimum period of 15 years. An EMP will be written for a 5 year period for the site. At the end of the 5 year period, the management plan will be reviewed in consultation with the NPTCBC ecologists, landowner and any independent ecological advice deemed necessary. Any amendments to the EMP will be informed by the monitoring and long term management aims agreed with the landowner, NPTCBC ecologists and any relevant independent advice. The reviewed, and where necessary amended, EMP will be issued for the next 5 year period. This will continue for the length of the s106 agreement for the site.
- 5.2 The management of the site is the responsibility of the land owner and will be ‘in perpetuity’ although the s106 agreement will cover a minimum period of 15 years. The developer will pay the agreed sum for each aspect of work they wish to carry out. The developer will then implement the actual physical works as detailed in section 3 within the site boundary. The on-going management and monitoring of the site will be undertaken by the landowner.
- 5.3 The management and monitoring will be reviewed and revised at 5-yearly intervals as detailed in section 5.1. Adequate resources will be made available by the developer and held by the landowner to ensure that all elements of management and monitoring, in accordance with the EMP, will be delivered in perpetuity. These resources will be agreed through an s106 agreement with the landowner.
- 5.4 A table detailing the proposed works and monitoring for each management aim is provided in Appendix 1. The table links to section 2 and 3 and details what management aim and monitoring works will be undertaken at what time for a 5 year period.



## 6.0 REFERENCES

**David Clements Ecology (2016)** *Biodiversity Compensation Sites Project Ecological Assessment: Land at March Hwyl, Rhos, Neath Port Talbot*

**English Nature (EN 2004)** *Bat Mitigation Guidelines*. A. J. Mitchell-Jones.

**Froglife (1999)** *Reptile Survey: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation*. Froglife Advice Sheet No. 10. Froglife, Halesworth.

**Griffiths, R A & Inns, H (1998)** *Surveying In: Gent, A & Gibson, S (Eds.) Herpetofauna Workers' Manual*. Joint Nature Conservation Committee.

**Joint Nature Conservation Committee (JNCC 2006)** *National Vegetation Classification: Users' Handbook* John S. Rodwell

**Newbold, C, Honnor, J & Buckley, K (1989)** *Nature Conservation and the Management of Drainage Channels*

**Peterken, G.F. (1981)** *Woodland Conservation and Management*

**United Kingdom Steering Group (UKSG 1995)** *Biodiversity: The UK Steering Group Report*. Vols 1-2. HMSO, London.

**Wales Biodiversity Partnership (WBP 2016)** *Section 7: Interim List of Living Organisms & Habitats of Principal Importance for the Purpose of Maintaining and Enhancing Biodiversity in Wales*. Wales Biodiversity Partnership/Welsh Government.

**APPENDIX 1: TIMING OF WORKS (PRE & DURING CONSTRUCTION)**

**Table 1: showing suitable time for carrying out works in relation to protected species**

Management Areas/Tasks	Year of Return	Year 1						Year 2						Year 3						Year 4						Year 5						Method				
		J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D					
<b>POND CREATION</b>																																				
Pond Creation incl excavation	Year 1	■					■																													2 A
De-siltation of Pond via sediment and vegetation removal	Year 5																															■			■	3 A
Monitoring of pond	Years 2 & 4								■		■	■																								3 A
<b>REPTILE ENHANCEMENT WORKS</b>																																				
Creation of Reptile Refugia		■	■	■	■	■	■																												2 B	
Monitoring of Reptile Populations	Years 1,3,& 5		■	■	■	■	■							■	■	■	■										■	■	■	■					3 B	
<b>CATTLE GRAZING</b>																																				
Topping of rush dominated habitat	Year 1	■	■		■		■																												2 C	
Grazing of grassland	Annual			■	■	■			■	■	■			■	■	■				■	■	■				■	■	■							2 C	
NVC Monitoring of Grassland	Years 2 & 4								■	■	■										■	■	■													3 C
PONT monitoring	Annual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	3 C
<b>CATTLE KRAAL</b>																																				
Creation of cattle kraal	Year 1	■	■	■	■	■	■																												2 D	
Monitoring of kraal	Annual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	3 D	
<b>SIGNAGE</b>																																				
Installation of signage	Year 1	■	■	■	■	■	■																												2 E	
Monitoring of signage	Annual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	3 E	

**APPENDIX 2: ARTIFICIAL REPTILE REFUGIA**



A reptile bank under construction. Turf has been stripped to create a shallow pit to receive a pile of hardcore and logs. This will be covered with the stripped turves (Lee Brady)

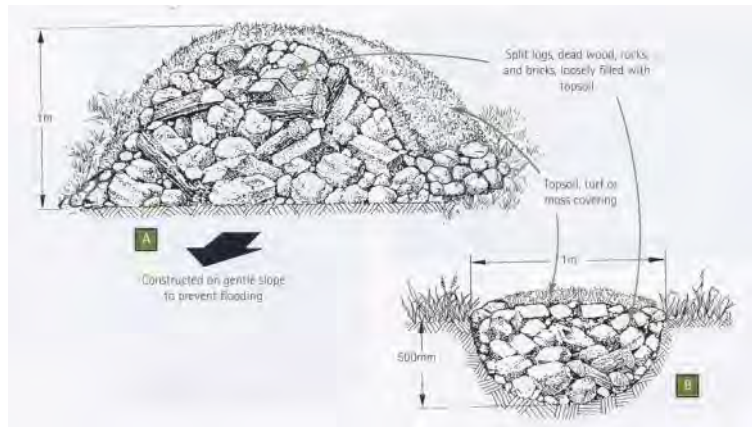
(From the *Reptile Habitat Management Handbook*)



Part-buried refugium



Buried refugium with clay entrance pipes






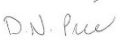
**DAVID CLEMENTS ECOLOGY LTD**

**BIODIVERSITY COMPENSATIONS SITES PROJECT**

**ECOLOGICAL MANAGEMENT PLAN (EMP):  
RECREATION GROUNDS, PONTARDAWE, NEATH PORT TALBOT**

**February 2017**

**David Clements Ecology Ltd  
Carlton House, 5 Herbert Terrace, Penarth, Glamorgan, CF64 2AH  
Tel: 029 20 350120 Fax: 029 20 711997  
[info@dce.org.uk](mailto:info@dce.org.uk)**

<b>Author:</b>	Aislinn Harris BSc (Hons) ACIEEM		14.02.17
<b>Checked by:</b>	Dr Neil Price BSc MSc PhD MCIEEM		14.02.17
<b>Version No./Stage</b>	v 1.0		

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by David Clements Ecology Ltd (DCE) for Neath Port Talbot County Council (NPTCBC) and refers to the land surrounding the recreation grounds, Pontardawe (SN 72824 04366.). This document sets out for an Ecological Management Plan (EMP) for the on-going management and enhancement of retained and new features of wildlife and conservation significance.
- 1.2 The parcel of land, henceforth referred to as the site, is located to the east of the town of Pontardawe and measures approximately 8.02ha. The site consists of woodland, marshy grassland, tall ruderal and amenity grassland habitats. It is mainly made up of two large well managed playing fields with more natural habitats around its periphery. The site is well used by the local community as a recreation ground and for local sports games.
- 1.3 The River Tawe flows along the eastern and southern site boundary. Light industrial units are present to west and residential housing is situated along the northern edge of the site. The wider landscape is semi-urban with the town of Pontardawe to the west of the site and a small amount of housing extending along the roads to the north. A small amount of woodland lies to the east of the site with fields and hedgerows in the wider area.
- 1.4 The site is being considered as a potential compensation site as part of a proposed Biodiversity Compensation Project led by Neath Port Talbot County Borough Council. The Biodiversity Compensation Sites Project aims to identify survey and provide recommendations for a number of sites within Neath Port Talbot that could be suitable for enhancement works, funded through the planning system, to both benefit and enhance biodiversity. The sites will be used as mitigation for biodiversity losses experienced through the planning system which cannot be avoided or adequately mitigated for within the site boundary.
- 1.5 This Ecological Management Plan (EMP) is written so that each management aim can be undertaken when funds become available via the planning system. An indicative costing for the works to undertake each management aim is provided in section 2. A developer can then be matched with one or more management aims depending on the scale of their unavoidable biodiversity impacts via development works. In the first instance a developer must be matched to implement a management aim the same as the habitat they are losing through the proposed works. If a direct match is not possible then a similar habitat to that being lost must be implemented. In exceptional circumstances NPTCBC may accept implementation of a management aim that is not similar to the habitat being lost. Demonstration of why a similar habitat cannot be created must be provided by the developer.

### *Ecological Survey & Assessment*

- 1.6 The site was surveyed on 19<sup>th</sup> August 2016 in good weather, being dry and still, and was subject to a reconnaissance Phase 1 survey/Preliminary Ecological Appraisal in accordance with the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM 2013). This was based on the Phase 1 vegetation

classification methodology developed by the former Nature Conservancy Council (current version: JNCC 2007), a nationally-accepted and standard method for the rapid survey and appraisal of ecological habitats which is based primarily on the recording of vegetation and its classification into defined habitat categories. Dominant and conspicuous flora species were recorded and ‘target notes’ were prepared for any features of particular interest. A detailed report of the Phase 1 survey is provided separately within the David Clements Ecology Report (2016).

### **Aims & Constraints**

- 1.7 The EMP for the recreation ground at Pontardawe aims to improve species diversity within certain habitats on the site. However, it must be recognised that the first and foremost use of the site is as a recreation ground for the local community and it must continue to function as such. Therefore no proposals are included within this document for the areas of amenity grassland which are used as playing fields for sports.
- 1.8 Given the above, the proposals within this document focus on the habitats around the edge of the site. Broad habitat types have been mapped and a species list for each habitat has been made within the separate phase 1 survey report DCE Ltd (2016).
- 1.9 The aim of the management works within the grassland areas is to increase species diversity through sensitive management rather than managing the grassland for specific species. Through such management techniques plant species that naturally flourish will establish in their preferred habitat conditions. For example marshy grassland species will naturally succeed in wetter areas compared to neutral grassland species.
- 1.10 Bats are a European protected species and as such the consideration of potential impacts to such animals is a statutory consideration of the planning process. The provision of mitigation for direct impacts on roosting bats is a statutory duty and will not be dealt with in this document.
- 1.11 Nearly all nesting birds are protected under the Wildlife & Countryside Act 1981. The direct loss of known nesting sites within a development site is a statutory consideration of the planning process. The provision of mitigation for direct impacts on nesting birds is a statutory duty and will not be dealt with in this document.
- 1.12 Bat and bird boxes used as a habitat enhancement for general habitat loss within a development site will be erected within the site boundary. Given the proximity of the River Tawe and the general suitability of the habitats on site for bats and birds, it is expected that such species will use the site.
- 1.13 There is opportunity to engage the public with the proposals within this document. For example:
- The use of volunteer parties for Himalayan balsam pulling during the spring or early summer months.
  - The use of appropriately trained and licenced volunteers to check the bird boxes for evidence of use. The volunteers can then record the species observed and



submit the records to the local records centre. Depending on the species observed and the frequency of box use a bird ringing project could be set up for the site.

- The use of appropriately trained and licenced volunteers to check the bat boxes for evidence of use. This can either be via emergence surveys which do not require the presence of a licenced bat ecologist, or alternatively, a licenced bat ecologist could check the boxes for evidence of use. The volunteers can then record the species observed and submit the records to the local records centre.

## 2.0 MANAGEMENT AIMS & METHODS

The below sections detail the aims of this management plan for each habitat type, noted within the phase 1 survey DCE Ltd (2016), that would benefit from sensitive ecological management.

### *Japanese Knotweed Management*

- A dense stand of Japanese knotweed is present along the ditch to the northern edge of the site. Smaller stands are then scattered across the site as shown on Plan 1. Japanese knotweed is a highly invasive non-native species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such it is an offence to plant or allow this species to grow in the wild. Under the Environmental Protection Act 1990, Japanese Knotweed is classified as controlled waste. Annual monitoring will be undertaken and re-treatment where necessary for a 5-10 year period. Some suggestions on potential control strategies are given below, though a final strategy will be discussed and finalised with an approved contractor prior to works being undertaken.

#### 2 A) Chemical control

- Herbicide treatment is an effective method to control Japanese knotweed. Herbicides can either be applied early in the growing season and or later in the season. A combination of spraying and stem injection will be used treatments will be used in at least the first year of treatment.
- Spraying can take place late in the season, i.e. August to September, to uncut foliage and stems at the end of the growing season. The foliage should be comprehensively wetted with herbicide during a period of dry weather before the first frosts have begun to wilt the foliage, for example using a knapsack sprayer.
- Where there is risk of contamination to a watercourse, choice of herbicide is limited to formulations of Glyphosphate and 2,4-D amine that are approved for use in or near water. Use of a herbicide in or near water requires consultation with NRW. Other herbicides may be used in areas which are away from water and or which pose no risk of contamination. Advice can be sought from a BASIS-registered pesticides advisor prior to commencement of a spraying programme. Any person handling and or applying herbicides must hold a certificate of competence from the National Proficiency Tests Council (NPTC). A PA1 and PA6w qualification to use equipment and spray in close proximity to a water course.
- To avoid harm to any invertebrates particularly bees and other pollinators, herbicide spraying should take place early in the morning or evening in the summer months. Chemical control can only be carried out by approved persons under pesticides regulations.

#### 2 B) Manual or non-chemical control

- The entire root and stem system must be excavated up to 7m laterally and 2m deep in

areas of infestation. Excavators with caterpillar tracks should be avoided in infested areas to reduce the risk of transferring infestations. On site burial should be to a depth of 5m. The contaminated soil material should be laid in layers less than 1m in depth and covered with a geotextile layer or a heavy gauge polythene sheet, prior to infilling

- *Combined mechanical and herbicide treatment* can be effective, particularly for the treatment of Japanese knotweed. Using an excavator, the plant material should be scraped into a pile, together with the upper 50cm topsoil containing the crowns and rhizomes, and stockpiled separately from other materials. An excavator can be used to scrape surface crowns and rhizomes into a pile. The exposed ground can be then cultivated to a depth of 50cm, and the piled material spread over this area. The process stimulates the rhizome to produce a higher density of stems, which renders it more vulnerable to herbicide treatment. Subsequent herbicide treatment has been observed to eradicate knotweed after only two applications, which may be performed within the same growing season.
- Digging can be carried out during the winter months, and then regrowth treated during the spring and summer. Soil contaminated with knotweed will be stockpiled in area that will be undisturbed and regular regrowth treated with herbicide, the upper 50cm should be stockpiled separately from the other less infested material. Where it is intended to bury infested materials on site – a non-persistent herbicide such as glyphosate must be used.
- Extreme care must be taken to ensure that all equipment used on site is free of material contaminated by either Japanese knotweed or Himalayan balsam – before leaving the site. To reduce the risk of contaminating vehicles, excavators with caterpillar tracks should be avoided.
- The onsite disposal will require a Landfill Tax exemption for contaminated soil from customs and excise and a registered exemption of the waste management regulations 1994, as it is considered to be a soil contaminant. NRW will also require notification prior to any burial/burning being carried out. The location of any burial must be recorded, as further chemical treatment may still be required in the future.

### ***Himalayan Balsam***

- Himalayan balsam is present along the southern boundaries of the site in the understorey of the woodland areas as shown on Plan 1. Himalayan balsam is species listed on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). As such it is an offence to plant or allow this species to grow in the wild.
- Annual monitoring will be undertaken and re-treatment where necessary for a 5-10 year period. Some suggestions on potential control strategies are given below, though a final strategy will be discussed and finalised with an approved contractor prior to works being undertaken.

## **2 C) Chemical Control**

- Himalayan balsam can be treated effectively through the use of an approved herbicide which can be applied in late spring when the plants are nearing maximum height but

before flowering.

- The spray must be applied late enough to ensure that germinating seedlings have grown up sufficiently to be adequately covered by the spray. Small infestations and individual plants can be controlled by using a suitable herbicide in a weed wiper. Treated stems can be left to decay after chemical treatment, or burnt or composted, if left on site.

## **2 D) Manual or non-chemical control**

- Himalayan Balsam can also be controlled by hand pulling or machine cutting, provided there is access and the plant can be cut at ground level. A cut above the lowest node will cause the plant to regrow and flower later in the season. Pulling or cutting should be carried out before the end of June, i.e. before the flowers have set seed. Frequent cutting will prevent the plant flowering although cutting too early will result in the regrowth and formation of the flower heads with a greater number of seeds.
- Mechanical control is likely to be effective only in those locations where good access is available and the ground smooth enough for close mowing and free of shrubs and bushes.
- Plant stems can be moved off site and disposed of at landfill or composting facilities if material can be guaranteed free of seeds. To avoid all risk, transport off site should only be carried out before the flowering period. All disposal operations should take place prior to flowering times with the relevant exemptions for burning. When burning, other considerations such as local by-laws and potential pollution etc will need to be accounted for. Otherwise balsam material can be taken to an approved licensed disposal facility, taking care to ensure that all materials are well sealed during transit.

## **2 E) Ditch Management**

- All works within the ditch will require a Water Course Consent from the Local Planning Authority prior to any works being undertaken. This application will be made separately but will detail the below principles.
- Any dredging works will be undertaken between the months of September and February to avoid high impacts to invertebrates and flowering plants.
- The entire length of ditch within the site will be cleared in year 1 of the s106 agreement for the work. The ditch will be cleared to a depth from the bank top of no more than 1m in the centre; the edges of the ditch must be shallower. The aim is to create a varied ditch profile with deeper and shallower areas of water, this is shown on plan 2. All sediment removed from dredging will be left on the bank side for 24hrs to allow any fauna to escape back into the ditch.
- The bankside vegetation will be cut twice a year to a height of 30cm, one cut will take place in April and one cut will take place in September. The vegetation on the bank sides of the ditch will be cleared in alternate 50m sections as shown on plan 2. This will ensure neighbouring vegetation is retained for any local fauna, displaced through the clearance works, to use. All cuttings will be removed from the area and either removed from site or placed in the compost frames located within the site boundary.

**2 F) Pond Creation**

- A small pond will be created along the length of the ditch currently present on site in year 1 once the s106 has been agreed. The banks of the ditch on both sides will be widened a minimum length of 1m as shown in plan 3. A small digger will be used to cut into the ditch bank on opposite sides of the ditch to create a roughly oval shape.
- The pond will have two depths to create a varied profile suitable for a variety of wildlife. A maximum depth of 0.5m will be dug in the centre of the pond. The outer half of the pond will only be dug to a depth of 0.3m. It is not proposed to line the pond at this point in time as the ditch currently holds water indicating that the hydrology and geology of the site is suitable. It is thought highly likely that the pond will retain water once filled from rain water.
- The pond will not be planted with aquatic vegetation. It will be allowed to naturally re-vegetate and establish with plants from the locale. The pond will also not be stocked with fish.
- All pond clearance works will be undertaken during the winter (November to January) to avoid disturbing amphibians and nesting birds. An excavator may be required if large amounts of silt are removed. This will need to be a tracked excavator with hinged arm than can swivel 360 degrees.
- The pond will be assessed by an ecologist in year 5 once the s106 has been agreed and the pond creation implemented. If pond clearance is deemed necessary, no more than 50% of the pond area will be cleared at any one time. The clearance will include vegetation removal from within the pond, pond edges and de-siltation of the pond floor. All sediment and vegetation removed from pond will be left on the bank side for 24hrs to allow any fauna to escape back into the pond. The sediment and vegetation will then be removed from the site and disposed of appropriately.

**2 G) Bat & Bird Box Scheme**

- At least 20 bat and 20 bird boxes will be erected on mature trees within the woodland around the site. These will be of woodcrete construction, such as Schwegler models, as these are more durable and require minimal after-maintenance – see Appendix 3.
- Bat and bird boxes will be of ‘woodcrete’ construction, such as those manufactured by Schwegler Ltd, as these are more robust and longer-lived than traditional wooden boxes and require minimal after-maintenance. Boxes will be mounted at least 4m from the ground (preferably 5m) in locations where they cannot be readily accessed by predators or humans (e.g. away from footpaths). Entrances to boxes will not be obscured by overhanging vegetation and will not be illuminated at night. Bat boxes will be installed in groups of three around the south-east, south-west and south aspects of a single tree. Bird boxes will be installed singly, at intervals of about 5-10m. Further details are provided in Appendix 3.
- Cleaning out will be undertaken by appropriately experienced and, for bats, licensed personnel every year. Bird boxes will be cleaned between the months of October and February, outside of the bird nesting season. Bat boxes will be cleaned out during the

winter period of November to February, when bats are least likely to be present in the boxes. Both bat and bird boxes will be visually checked prior to cleaning out, if any animals are present the boxes will not be cleaned out.

## **2 H) Reptile Refugia**

- At least 1 reptile refugium will be constructed within the site boundary – see Plan 4. A 2m by 2m section of the current west facing slope along the road will be removed and reptile refugium will be created. The soil and turf removed can be used to cover over the created refugium.
- Reptile refugia, which provide shelter to both hibernating and active reptiles, can be produced by assembling a range of materials such as cut timber, brash, inert hardcore, bricks, rocks, grubbed up tree roots or building rubble, in a sunny sheltered area which is well connected to other suitable reptile habitat. The refugia must have a diverse structure for example by creating a compacted core, with more loose outer layers, ensuring that larger cavities are filled with smaller materials such as wood chippings or topsoil. Materials that will decompose should not be placed beneath heavy components such as bricks or rocks, to avoid risk of collapse. Access points will be located around the edges, for example by ensuring timber protrudes from the sides. Turf (or vegetated top soil) should be used to cover the final construction and where this is not possible, should be seeded with a meadow mix. It is also possible to add materials, brash, timber etc, into an existing pit rather than creating a mound. To avoid flooding, these must not be created where soils are impermeable or in low lying areas. Drainage can be provided for example through the addition of gravel and slotted pipes within the structure. Detailed illustrations are included in Appendix 4.
- The reptile refugia will be created in year 1 once the s106 has been agreed. Refugia can be created through manual labour and the use of volunteers. However, for the purpose of this document it is assumed that the refugia will be created with machinery and surplus materials from the site such as brash and rubble.

## **2 I) Species Rich Grassland Creation**

- A buffer strip between the woodland, running around the periphery of the site, and the more intensively managed areas of the site will be created through management of the current vegetation. This strip will measure at least 5m in width from the woodland edge and will be subject a low frequency cutting regime.
- The edge of the buffer strip adjacent to the amenity grassland areas will have an edging material placed it around. Exact details of lawn edging will be agreed with the site owner but it will need to be a robust and cost effective material. The edging will be placed around the entire periphery of the buffer strip to demarcate the areas to be subject to different mowing regimes. It is suggested the edging material is of a short height to allow public access in all areas of the site.
- The buffer strip will be cut four times a year with one cut occurring in April, one cut September, one cut in October and one cut in February. The buffer strip will not be cut between the months of May and July inclusive. This will allow invertebrates to

maximise any flowering plants throughout the summer period and prevent ranker grass species from taking hold.

- All cuttings will be collected and removed from the area. The cuttings will either be removed from site or placed within the compost frames located within the site boundary.

## **2 J) Woodland Management**

- The woodland within the site is all considered to be planted and subject to some level of recreational use by the public. Woodland areas along the western site boundary have a very minimal amount of ground cover. The areas of woodland which are difficult to access have a more diverse ground flora of common species.
- In general given the young age of most of the woodland within the site boundary a high level of management and work is not proposed. It is not deemed practical to fence areas of the woodland off to encourage the establishment of more diverse ground flora as the first and foremost use of the site is as a recreation grounds.
- NPTCBC have a duty to assess the health and safety of all the trees within the public open areas that they own. If works to any trees within the site are required on health and safety grounds, the Council will have to undertake such works themselves. However a small amount of timber can be saved and used to create log piles within less open and disturbed areas of the site.
- Where possible, timber produced through tree maintenance works will be used to create log piles within the site boundary. Given the ad hoc nature of such works guidance on where to place the log piles will be sought from the County Ecologists.
- Where any trees are to be felled it is recommended that larger pieces of timber such as the trunk are left where they are felled. All brash and smaller limbs can either be removed from site or used to create lean to shelters for the enjoyment of local children in the open woodland areas. All work to remove the trees must be completed outside of the bird nesting period which is approximately March to August inclusive. Alternatively, any works which must necessarily be carried out during this period should be preceded by a survey to ensure that no nesting birds are present.
- The treatment of the stand of Japanese knotweed along the northern edge of the site will create a glade within the woodland belt. This will allow natural regeneration to occur and provide valuable open habitat within a wooded area. No further diversification of the woodland habitat is proposed within the first 5 years of site management.

## **2 K) Bench Creation**

- The provision of benches within the site boundary would most likely be a welcomed measure by local residents and members of the public. Benches or seating structures can be designed to be both functional and wildlife friendly. A drystone wall bench is fire resistant to which should help to prevent vandalism.

- A bench design is shown in Plan 5 and will measure 1.5 wide with a base 0.5m high and a back rest of 0.5m high. The depth of the bench will depend on materials and the dimensions of the earth bank. The exact design of the wall will have to be agreed with the contractor undertaking the work. An earth mound will be created to the back of the bench to help prevent the bench being vandalised and also create additional habitat for wildlife. The bench must be constructed using traditional dry stone walling techniques to provide shelter for wildlife such as insects, reptiles or small mammals.
- The bank can be seeded with a wildflower mix, EM1 Basic General Purpose Meadow Mixture. In year 1 the bench bank will be cut every 2 months to ensure weeds and pernicious plants do not outcompete the sown plants. From years 2 to 5 the banks will be cut four times a year with one cut occurring in April, one cut in September, one cut in October and one cut in February. The banks will not be cut between the months of May and July inclusive.



### 3.0 SITE MONITORING

Monitoring of the work completed under the EMP will be required to provide an evidence base that the management works are improving biodiversity within the site. Monitoring of species abundance and population size within the site and the condition of habitats which have been managed to improve the biodiversity will be required.

Each management aim will require a different level of monitoring. The monitoring requirements for each management aim are detailed below.

#### 3 A) *Japanese Knotweed Management*

- An annual visit to site to inspect the areas of Japanese knotweed which have been treated will be required. The annual visit will inspect the levels of re-growth of the plant in the treated areas and be used to determine the levels of treatment in the next 12 months.

#### 3 B) *Himalayan Balsam*

- An annual visit to site to inspect the areas of Himalayan balsam which have been treated will be required. The annual visit will inspect the levels of re-growth of the plant in the treated areas and be used to determine the levels of treatment in the next 12 months.

#### 3 C) *Ditch Management*

- To monitor whether or not the ditch management works have improved biodiversity within that habitat, invertebrate surveys are recommended. Three survey visits, one in spring, summer and autumn will be completed each year that monitoring is required. Five monitoring stations (one station every 100m) will be agreed along the entire length of the ditch within the site boundary. At each monitoring station dip-netting of the waterbody and sweep netting of the bankside vegetation will be used. A list of aquatic species present and surface coverage of flora at each monitoring station will be taken.
- Invertebrate monitoring is recommended in years 2 and 4 once the s106 has been agreed and the ditch management implemented.

#### 3 D) *Pond Creation*

- To monitor whether or not the pond creation works have improved biodiversity within that habitat, invertebrate surveys are recommended. Three survey visits will be completed each year that monitoring is required. One monitoring station will be agreed along the entire length of the ditch within the site boundary. Dip-netting of the waterbody and sweep netting of the bankside vegetation will be used. A list of aquatic species present and surface coverage of flora at each monitoring station will be taken.
- Invertebrate monitoring is recommended in years 2 and 4 once the s106 has been agreed and the ditch management implemented.

**3 E) *Bat & Bird Box Scheme***

- The monitoring of bat boxes by volunteers would be a welcome measure and could take the form of walks observing the boxes or focused emergence surveys.

**3 F) *Reptile Refugia***

- If a developer chooses to create a reptile refugium and translocate a reptile population to the site a scheme of monitoring will be required. Monitoring will include a refugia survey of the areas of site suitable for reptiles to be present.
- Reptile monitoring is recommended in years 1, 3 and 5 once the s106 has been agreed and a reptile population translocated. Refugia surveys are best carried out between the months of April and September inclusive.

**3 G) *Species-Rich Grassland***

- An National Vegetation Classification (NVC) survey of the grassland areas managed for biodiversity will be required. 20 quadrats within the buffer strip will be chosen and their position marked using a GPS device. This will ensure that the same quadrat locations can be monitored during each visit. Standard NVC survey techniques, as detailed within the National Vegetation Classification: Users Handbook (2006) will be used.
- Grassland monitoring is recommended in years 2 and 4 once the s106 has been agreed and the EMP implemented.

**3 H) *Woodland Management***

- An National Vegetation Classification (NVC) survey of the woodland areas managed for biodiversity will be required. 5 quadrats within the woodland area will be chosen and their position marked using a GPS device. This will ensure that the same quadrat locations can be monitored during each visit. Standard NVC survey techniques, as detailed within the National Vegetation Classification: Users Handbook (2006) will be used.
- Woodland monitoring is recommended in years 2 and 4 once the s106 has been agreed and the EMP implemented.

**3 I) *Bench Creation***

- Monitoring of any benches created as part of this EMP will be limited to an annual check of the structure to ensure it is safe. A visual inspection will be undertaken of each bench. If any bench has suffered from damage, the damage will be recorded and fixed as soon as possible.

## 4.0 BIODIVERSITY ENHANCEMENT WORK COSTS

4.1 A range of indicative costs are provided below for the works to undertake the actual physical works to create some of the management aims for the site. Costs are also provided for the on-going management of each management aim for the 5 year period of the EMP. Monitoring on the physical and management works is also required to ensure the works are having a positive impact on wildlife and biodiversity. Therefore costs for a range of monitoring techniques are also provided within this section.

4.2 The costs within table 2 and 3 are index linked and as such will be subject to inflation and interest costs. The exact figures for inflation and interest will be calculated by the developer and finalised through the s106 agreement.

4.3 The VAT costs included within all calculations below are based on a 20% rate.

### 4.4 *Physical & Management Work Costs*

#### *Japanese Knotweed Management*

- Chemical control – (costs provided by Ed Tucker Conservation)  
Day Rate for Operative = £150  
Chemical Costs per/10 litre = £50

Total costs = £240 (incl VAT)/day

Ed Tucker Conservation estimated treatment would take approximately 8 days in the first year of management. Each subsequent year should then take a day less than the previous year. Costs for each year of treatment are included below in Table 1.

Table 1 – Chemical Control Costs for Japanese Knotweed

Year	Costs (incl VAT)
1	£1,920.00
2	£1,680.00
3	£1,440.00
4	£1,200.00
5	£960.00
5 Year Management	£7,200.00

- Manual or non-chemical control

This control method is not recommended for the Japanese knotweed within the site, as such costs are not provided.

#### *Himalayan Balsam*

An independent and specialist contractor will be required to undertake and works to control and or remove Japanese knotweed from the site.

- Chemical Control

This control method is not recommended for the Japanese knotweed within the site, as such costs are not provided.

- Manual or non-chemical control – (costs are provided by Ecovigour Ltd)

Strimming of vegetation 1 person/day = £200/day

Costs = £240 (incl VAT)/day. Cutting will be required each year for a 5 year period.

Total costs = £1,200.00 incl VAT

### ***Ditch Management***

- Dredging – (costs are provided by Ecovigour Ltd)  
2.8 tonne mini digger & driver hire/ day = £360/day

Estimated time to dredge ditch – 2 days

Watercourse Consent = £50

Total costs = £914 incl VAT

- Vegetation Clearance– (costs are provided by Ecovigour Ltd)

Strimming of ditch banks 2 person/day = £350/day

Vegetation disposal from site incl 4x4 driver and trailer = £280/day

Estimated time to cut, collect and remove bank side vegetation = 1 day spring

= 1 day autumn

= £756 incl VAT

Total costs for 4 year period = £3,024 incl VAT

### ***Pond Creation***

- Pond Creation Works– (costs are provided by Ecovigour Ltd)

2.8 tonne mini digger & driver hire/ day = £360/day

- De-siltation– (costs are provided by Ecovigour Ltd)

2.8 tonne mini digger & driver hire/ day = £360/day

Total costs = £864 incl VAT

### ***Bat & Bird Box Scheme***

- Bat Boxes – (costs provided by NHBS website)

10 x 1FF Schwegler bat box @ £61.96/box = £619.60

10 x 2FN Schwegler bat box @ £37.96/box = £379.60

- Bird Boxes – (costs provided by NHBS website)

10 x 1B 26mm hole Schwegler bird box @ £24.95/box = £249.50  
10 x 2H Schwegler bird box @ £23.95/box = £239.50

Total costs = £1,488.20

### ***Reptile Refugia***

- Refugia Creation – (costs are provided by Ecovigour Ltd)  
2.8 tonne mini digger & driver hire/ day = £360/day

Total costs = £432 incl VAT

### ***Species Rich Grassland***

- Provision of Compost Frames – (costs are provided by Primrose)  
1 x 1575L Wooden Composter = £69.99
- Grassland Areas – (costs are provided by Ecovigour Ltd)  
Mower with operative/day = £360/day  
Vegetation disposal from site incl 4x4 driver and trailer = £280/day

Estimated time to cut, collect and remove grass = 1 day April  
= 1 day August  
= 1 day October  
= 1 day February  
= £768.00 incl VAT

Total costs for 5 year period = £3,909.99 incl VAT

### ***Woodland Management***

No costs within the first 5 years of site management. All tree works within the site are likely to be due to health and safety concerns. As such they will be the responsibility of NPTCBC to complete.

### ***Bench Creation***

- Stone Supply – (costs are provided by Ecovigour Ltd)  
Maximum cost £180/tonne. Expected 1.5 tonne/metre of wall = £270/metre  
Bench 1.5m wide x 1m high = 1.5m  
£270 x 1.5m = £405/bench

Stone Laying – (costs provided by Ecovigour Ltd)  
1.5m x £50/m<sup>2</sup> = £75.00 / bench

Total costs = £480 / bench

- Create Bank  
Topsoil per/m<sup>3</sup> = £150/m<sup>3</sup>  
2m<sup>3</sup> x £150 = £300

EM1 Basic General Purpose Meadow Mixture = £34 /kg

Total costs = £976.80 / bench incl VAT

#### 4.5 Monitoring Work Costs

- ***Japanese Knotweed***

An annual visit to inspect the level of Japanese knotweed regrowth across the site will be required. However, it is known that the knotweed will require treatment for at least the next 5 years. As such the annual visit to inspect regrowth will be undertaken whilst undertaking treatment works each year should not result in an additional cost to the project.

- ***Himalayan Balsam***

An annual visit to inspect the level of Himalayan balsam regrowth across the site will be required. However, it is known that the balsam will require treatment for at least the next 5 years. As such the annual visit to inspect regrowth will be undertaken whilst undertaking treatment works each year and should not result in an additional cost to the project.

- ***Invertebrate Survey – Ditch***

Invertebrate Survey of ditch = 4 hrs Spring @ £260.00  
 = 4 hrs Summer @ £260.00  
 = 4 hrs Autumn @ £260.00

Lab Identification of samples = 1 days @ £455.00

Report of Findings to include GPS location of Monitoring Station = £325.00

Costs per year - £1,872.00 (incl VAT). Monitoring is proposed in years 2 and 4 from the agreement of the s106 agreement. However, the costs do not include mileage.

Total Costs = £3,744.00

- ***Invertebrate Survey – Pond***

Invertebrate Survey of pond = 3 hrs Spring @ £195.00  
 = 3 hrs Summer @ £195.00  
 = 3hrs Autumn @ £195.00

Lab Identification of samples = 1 day @ £455.00

Report of Findings to include GPS location of Monitoring Station = £325.00

Costs per year - £1,638.00 (incl VAT). Monitoring is proposed in years 2 and 4 from the agreement of the s106 agreement. However, the costs do not include mileage.

Total Costs = £3,276.00

- ***Reptile Refugia***

An artificial refugia survey across the site is proposed to monitor reptile populations. Refugia survey to include a survey visit to set out reptile refugia and seven subsequent site visits to check refugia. The below costs do not include mileage costs.

Survey cost per year = £816.00 (incl VAT). Monitoring is proposed in years 1, 3 and 5 from the agreement of the s106 agreement. The costs do not include mileage.

Total Costs = £2,448.00 incl VAT

- ***Species Rich Grassland***

NVC survey of buffer strip grassland = 1 day @ £455.00

Analysis/report of findings to include GPS location of quadrats = £325.00

Costs per year – £936.00 (incl VAT). Monitoring is proposed in years 2 and 4 from the agreement of the s106 agreement. The costs do not include mileage.

Totals Costs - £1,872.00 (incl VAT)



## 4.6 Total Costs for Each Management Aim and Monitoring

4.6.1 Table 2 collates all the costs given in sections 4.4 and 4.5 above. In order to ensure the longevity of the EMP, the project needs to have some benefit for the landowner. By managing a site for biodiversity in the long term there is little scope to make any other economic benefit from the land. It is suggested that by charging a nominal fee on the costs of the proposed management works, the security of the site in the long term will be achieved. The small fee may also encourage private landowners to enter into the scheme.

4.6.2 A land fee of 10% of the total physical, management and monitoring works is proposed for the 5 year period of the EMP.

Table 2 – Overall Project Costs

Type of Work	Physical Works	Management Works	Monitoring Works	Total cost for EMP period	Land fee at 10% for 5 yr EMP	Total Fee
<b>Japanese Knotweed Control - Chemical</b>	-	£7,200.00	-	£7,200.00	£3,600.00	<b>£10,900</b>
<b>Himalayan Balsam Control - Manual</b>	-	£1,200.00	-	£1,200.00	£600.00	<b>£1,800</b>
<b>Ditch Enhancement</b>	£914.00	£3,024.00	£3,744.00	£7,682.00	£3,840.00	<b>£15,122</b>
<b>Pond Creation</b>	£432.00	£432.00	£3,276.00	£4,140.00	£2,070.00	<b>£6,210</b>
<b>Bat &amp; Bird Box Scheme</b>	£1,488.20	-	-	£1,488.20	£740.00	<b>£2,228.20</b>
<b>Reptile Refugia Creation</b>	£432.00	-	£2,448.00	£2,880.00	£1,440.00	<b>£4,320</b>
<b>Species Rich Grassland Creation</b>	£69.99	£3,840.00	£1,872.00	£5,781.99	£2,890.00	<b>£8,671.99</b>
<b>Bench Provision</b>	£976.80	-	-	£976.80	£488.40	<b>£1,465.20</b>

4.6.3 The management and monitoring costs will need to be agreed during the negotiations of the s106 agreement and last for the 15 year period of the EMP. Although the EMP may be reviewed and amended it is expected that the broad management works for the habitat type will stay the same. Table 2 contains the management and monitoring costs required for the 6 – 15 year period of the site management agreed as part of the s106 agreement. A cost of 10% of the initial physical works has been allowed for Japanese knotweed, bat and bird boxes and each bench to cover any repair works or additional treatments which may be required over the long term.

Table 2 – 6 -15 Year Costs

Type of Work	Management Works	Monitoring Works	Land fee at 10% for remaining EMP life	Total Fee
<b>Japanese Knotweed Control - Chemical</b>	£1,440.00	-	£1,440.00	<b>£2,880.00</b>
<b>Himalayan Balsam Control - Manual</b>	£2,400.00	-	£2,400.00	<b>£2,400.00</b>
<b>Ditch Enhancement</b>	£6,048.00	£7,488.00	£13,536.00	<b>£27,072.00</b>
<b>Pond Creation</b>	£432.00	£3,276.00	£3,708.00	<b>£7,416.00</b>

<b>Bat &amp; Bird Box Scheme</b>	£148.82	-	£148.82	<b>£297.64</b>
<b>Reptile Refugia Creation</b>	-	£4,896.00	£4,896.00	<b>£9,792.00</b>
<b>Species Rich Grassland Creation</b>	£7,680.00	£3,744.00	£11,424.00	<b>£22,848.00</b>
<b>Bench Provision</b>	£97.68	-	£97.68	<b>£195.36</b>

## 5.0 SITE MANAGEMENT & RESPONSIBILITIES

### *Site Management*

- 5.1 Any work carried out as part of this management plan will be subject to on-going management and maintenance for a minimum period of 15 years. An EMP will be written for a 5 year period for the site. At the end of the 5 year period, the management plan will be reviewed in consultation with the NPTCBC ecologists, landowner and any independent ecological advice deemed necessary. Any amendments to the EMP will be informed by the monitoring and long term management aims agreed with the landowner, NPTCBC ecologists and any relevant independent advice. The reviewed, and where necessary amended, EMP will be issued for the next 5 year period. This will continue for the length of the s106 agreement for the site.
- 5.2 The management of the site is the responsibility of the land owner and will be ‘in perpetuity’ although the s106 agreement will cover a minimum period of 15 years. The developer will pay the agreed sum for each aspect of work they wish to carry out. The developer will then implement the actual physical works as detailed in section 3 within the site boundary. The on-going management and monitoring of the site will be undertaken by the landowner.
- 5.3 The management and monitoring will be reviewed and revised at 5-yearly intervals as detailed in section 5.1. Adequate resources will be made available by the developer and held by the landowner to ensure that all elements of management and monitoring, in accordance with the EMP, will be delivered in perpetuity. These resources will be agreed through an s106 agreement with the landowner.
- 5.4 A table detailing the proposed works and monitoring for each management aim is provided in Appendix 1. The table links to section 2 and 3 and details what management aim and monitoring works will be undertaken at what time for a 5 year period.

## 6.0 REFERENCES

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**APPENDIX 1: TIMING OF WORKS (PRE & DURING CONSTRUCTION)**

**Table 1: showing suitable time for carrying out works in relation to protected species**

Management Areas/Tasks	Year of Return	Year 1					Year 2					Year 3					Year 4					Year 5					Method					
		J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F	M-A	M-J	J-A	S-O	N-D	J-F		M-A	M-J	J-A	S-O	N-D
<b>INVASIVE NON-NATIVE SPECIES</b>																																
Japanese knotweed - Chemical Treatment	Annual																															2A
Himalayan Balsam - Mechanical Treatment	Annual																															2D
Monitoring of Invasive Species Re-growth	Annual																															3 A&B
<b>DITCH MANAGEMENT</b>																																
Dredging Channel	Year 5																															2E
Vegetation cutting on ditch banks	Years 2,3,4,5																															2E
Monitoring of ditch	Years 2 & 4																															3C
<b>POND CREATION</b>																																
Pond Creation incl excavation	Year 1																															2F 2F
De-siltation of Pond via sediment and vegetation removal	Year 5																															3D
Monitoring of pond	Years 2 & 4																															3D
<b>BAT AND BIRD BOX SCHEME</b>																																
Install Bat and Bird Boxes within Suitable Trees on Site	Year 1																															2G
Monitoring of Bird Boxes	Annual																															3E
Cleaning out Nest Boxes	Annual																															2G
Monitoring of Bat Boxes	Annual																															3E
Cleaning out Bat Boxes (providing	Annual																															2G



## **APPENDIX 2: TREATMENT OF TREES IN RELATION TO ROOSTING BATS**

Where bats are known to be roosting in a tree, a full method statement should be prepared and a licence obtained from the Natural Resources Wales, in accordance with current legislation.

In situations where the presence of bats is only deemed a possibility, but is not known for certain, the following best practice guidelines should be followed. These are based on the advice given by the Bat Conservation Trust (1997) *Bats and trees: A guide to the management of trees*.

Carry out works in the winter period November to February inclusive. Cutting in winter reduces the probability of encountering summer or transitional roosting bats (and avoids disturbing nesting birds), and should be suitable for trees within the site which are considered to have low to negligible hibernation potential.

Carry out the minimum necessary cutting work, and where felling leave as much as possible of the trunk standing; where trunks must be removed, fell these in sections;

Make cuts as far as possible above any suspected cavities (ie cut through solid timber rather than through cavities which may contain bats);

Lower any timber suspected of containing bats gently to the ground; leave any such timber on the ground for 24 hours before disposal to allow any bats time to leave;

Check any weight-bearing timber tears or splits for roosting bats before cutting, otherwise the split may close when weight is released, crushing any bats which may be present;

Where roosting bats are found during tree works, all work must cease until suitable expert advice has been sought; consultation with the relevant statutory agencies may also be required and mitigation measures set in place to ensure that the works proceed without causing further avoidable harm to bats.

Bear in mind that all species of bats in Britain are afforded the highest level of statutory protection against harm or disturbance which is available under UK law.

Works affecting trees, and more especially the clearance of scrub, should avoid the main bird nesting period (ie approximately March to August), as almost all species of British birds, and their nests, eggs and young, are also afforded full statutory protection against harm or disturbance whilst nesting. Where works have to take place during the nesting period they should be subject to prior survey to ensure that no nesting birds are present in the areas to be cleared, and kept to the minimum necessary.

## **APPENDIX 3: BAT & BIRD BOXES & BAT ACCESS POINTS**

### ***Selection of Trees***

Selected trees should be a minimum of 300mm diameter at the height of fixing. Trees should not be obviously unstable or badly rotted. The timber and bark at the point of fixing should be sound. Species of tree is not important, although broadleaved trees should be favoured.

If not enough trees of suitable size are available on the site it will be necessary to attach boxes onto the top of railway sleepers or wooden posts. These should be a minimum of 200mm diameter, and project at least 5m above ground level after piling.

### ***Location of Selected Trees***

Trees immediately adjacent to highways should generally be avoided, so as to avoid drawing bats and birds into the carriageway where they may be killed by traffic. Selected trees should ideally be set back from the highway edge by at least 5m, preferably more.

Bat boxes are more effective when mounted in clusters of, say, 4-5 in an area of about 50m square, but this is not essential. Otherwise, boxes can be scattered fairly randomly throughout the scheme, wherever there are suitable trees available.

### ***Position of Boxes on Trees***

Boxes should be mounted on tree trunks, rather than on boughs or branches. The mounting location should not be heavily shaded. Boxes should be mounted vertically on the tree.

Boxes should be mounted a minimum of 4m from the ground, preferably 5m, and as far as possible placed on the SE or SW-facing surfaces of the tree trunk.

Bat boxes should ideally be mounted in groups of 2-3 around the SE, S and SW faces of the same tree, so as to provide a wide range of microclimatic conditions.

The entrance to the box should be clear of obstructions and obstacles in the flight-path towards it. An 'open airspace' of about 3m square should be preserved in front of and below the entrance, and elsewhere any overhanging branches should be at least 1m away. The entrances of bat boxes should not be directly illuminated at night.

The mounting location should be readily and safely accessible by ladder, but not accessible by someone climbing up the trunk or onto an adjacent tree or wall etc; some lower branches may need to be trimmed below the box to remove ready handholds or footholds for would-be tree-climbers (as well as any small branches crowding the entrance).

As far as possible, boxes should be placed in locations which are not conspicuous from the ground, so as not to attract unwanted attention from passer-by. This objective is obviously assisted by selecting locations which are on private land, or which are not visible/accessible from public footpaths, byways etc.

### ***Fixings***

Schwegler 1B, 2H and 2F boxes come with a single point-of-attachment wire which benefits from modification. The wire should be cut through at centre top of the loop, and opened-out to provide two separate fixing straps, one on either side of the box (see graphic). A new fixing loop should be twisted at the end of each strap, and these used to nail up the box using two nails, one on either side of the box, rather than just the one nail as provided for. The two-nail fixing gives greater stability, allows the box to be fitted more closely to the tree trunk, and gives a second point of fixture in the event that one should fail in the future.

Fixing nails should be galvanised, or similar non-rusting type; a minimum of 85mm long by 5mm in diameter. Aluminium nails are preferred as they will present less of a chainsaw hazard in the future.

Fixing nails should be passed through a non-rusting metal washer of about 20mm diameter, and then through the loop of the fixing wire; nails should be driven into the tree trunk at an angle of about 45-50° from vertical.

Some 'slack' should be allowed in the fixing wires when mounting the box, to allow the tree continue to grow.



***Recording of Box Locations***

The location of each individual box should be carefully recorded on a suitable plan at a scale which is sufficient to indicate individual trees. A GPS position should be taken wherever possible.



1FF Bat Box



2FN Bat Box



1B Bird Box with 26mm hole



2H Bird Box

**APPENDIX 4: ARTIFICIAL REPTILE REFUGIA**



A reptile bank under construction. Turf has been stripped to create a shallow pit to receive a pile of hardcore and logs. This will be covered with the stripped turves (Lee Brady)

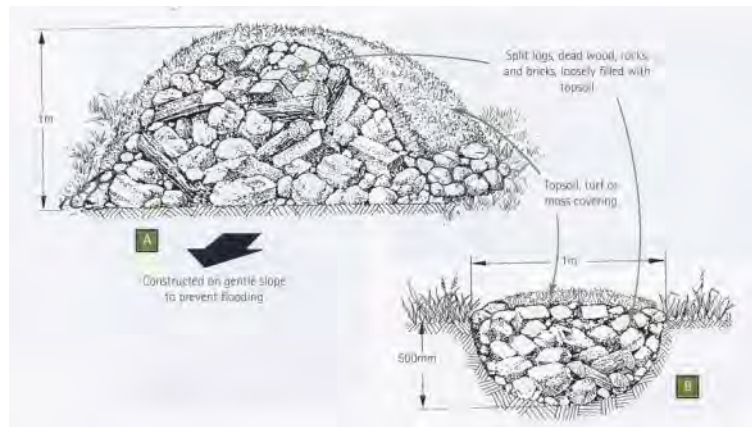
(From the *Reptile Habitat Management Handbook*)




Part-buried refugium



Buried refugium with clay entrance pipes



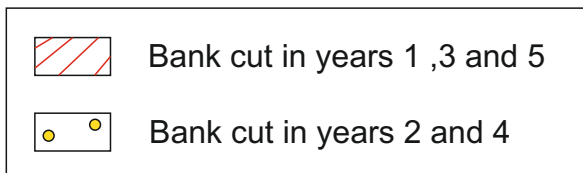
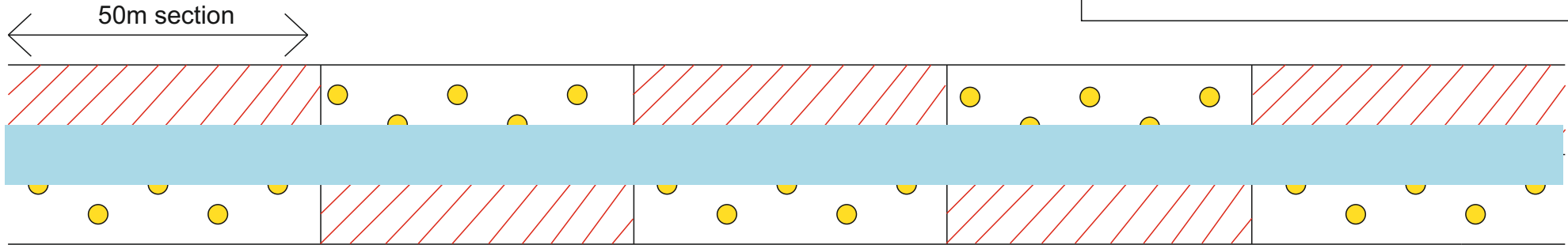


-  Amenity Grassland
-  Tall Ruderal
-  Marshy Grassland
-  Japanese Knotweed
-  Planted Broadleaved Woodland
-  Building
-  Tarmac
-  Ditch
-  Himalayan Balsam
-  Site Boundary
-  Standard Tree

***NPTCBC Biodiversity Compensation Sites  
Recreation Grounds, Pontardawe***

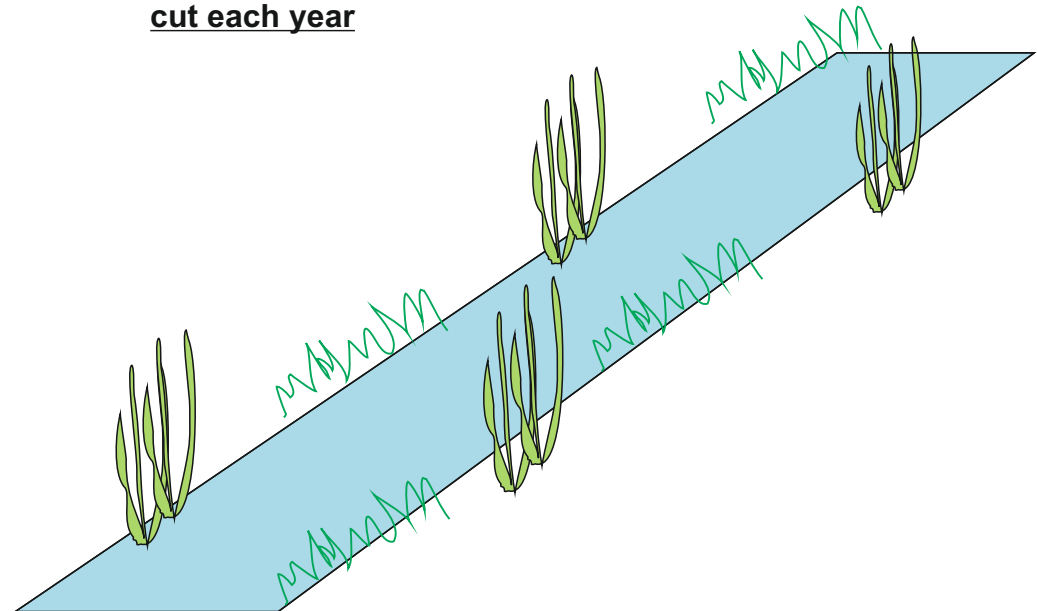
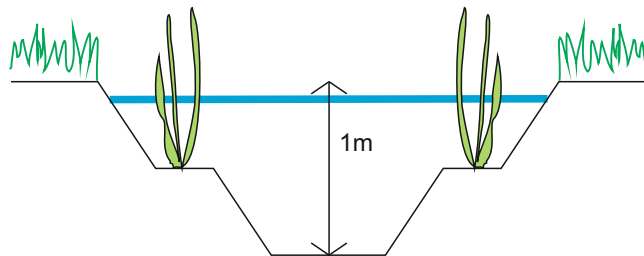
***Plan 1: Phase 1 Map***

**Plan View of Alternate cutting of vegetation each year**



**Vegetation Growth with alternate banks cut each year**

**Cross Sectional View of Ditch**



**NPTCBC Biodiversity Compensation Sites  
Recreation Grounds, Pontardawe**

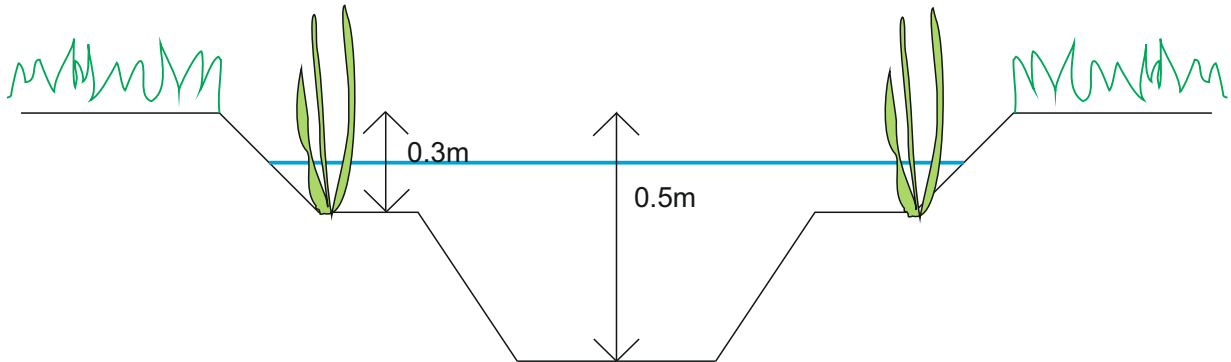
**Plan 3: Pond Creation**

DCE 844

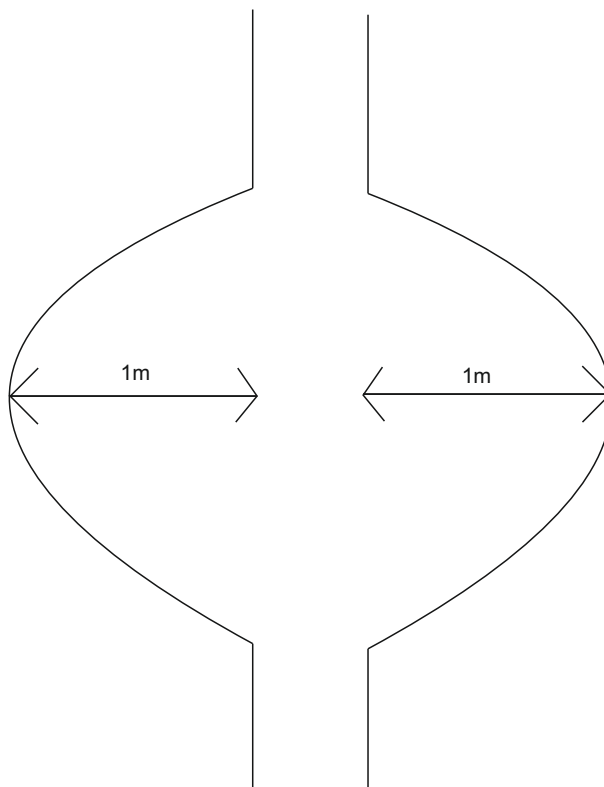
NTS

February 2017

**Cross-Sectional View of Pond**



**Plan View of Pond**





**NPTCBC Biodiversity Compensation Sites  
Potential Sites**

**Plan 5: Dry Stone Bench Proposal**

DCE 844

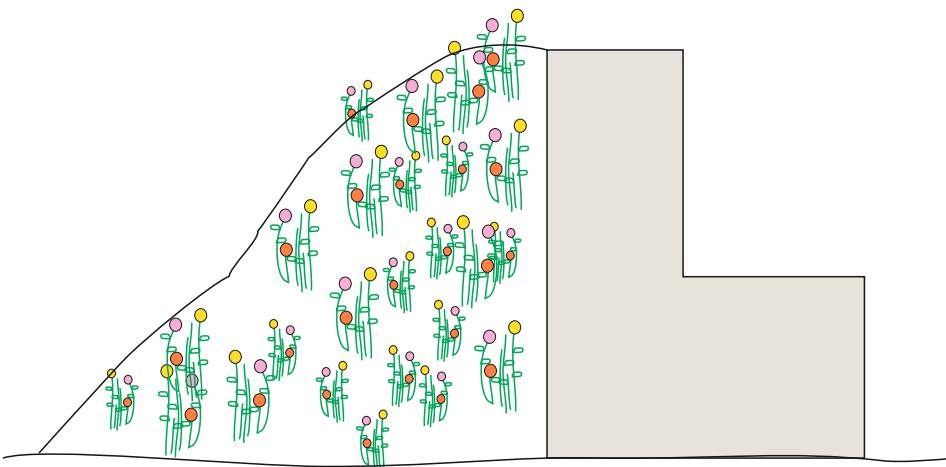
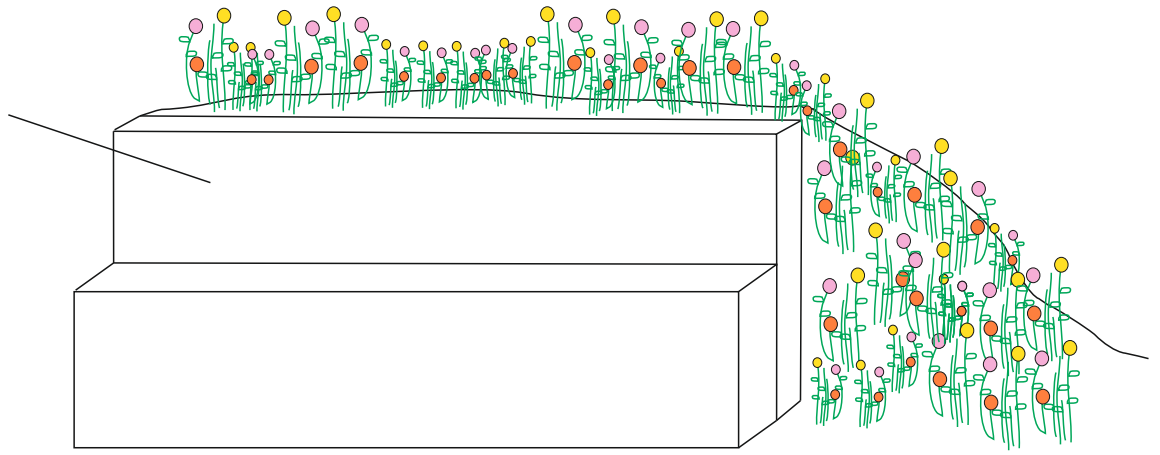
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February 2017

**Dry stone wall bench**

- 1.5m long
- 1m high base
- 1m high back rest
- Depth dependent on stone

To be built into man made bank. No cement fill



Sectional View of Bench