

**Powys Local Development Plan,
Deposit June 2015**

Habitat Regulations Assessment

Appendix 3 – Site Vulnerabilities.

Stage 1 – Draw together vulnerabilities from Appendix 1, representations made at the preferred strategy stage and further work.

Stage 2 – Check these cover the critical issues / key site parameters by using pilots.

Stage 3 – Prepare synthesised list of vulnerabilities (Table 1). Following previous comments that vulnerabilities at the preferred strategy stage (taken direct from the management plans) were a mixture of causes and consequences.

Stage 4 – Consider whether a Local Development Plan could reasonably, in theory, impact on the vulnerabilities listed (Table 2).

Stage 5 – Identify the European Sites susceptible to those vulnerabilities a LDP could reasonably impact on by cross reference to Appendix 1 & 2 and Table 1.

Stage 6 – Having regard to the spatial jurisdiction of the Powys Local Development Plan, decide which European Sites should be screened in for assessment against the Plan based on knowledge of their vulnerabilities.

DEFINITION

Vulnerabilities have been identified for each European protected habitat by Natural Resources Wales and Powys County Council. They are key relevant threats that have the potential to affect the environmental quality of the habitat, impacting one or more indicator species and therefore are a meaningful way to consider the potential impact of development options on the protected habitat as a whole, rather than individual aspects of it.

Given the methodology is premised on Vulnerabilities as a mechanism/tool for scoping the potential for 'likely significant effect', a definition of vulnerability is necessary. Whilst there is no single definition, the following help:

Dictionary source: *Habitat or species is capable of being hurt or damaged. Activity which is capable of habitat and/or species impact.*

Vulnerability is a measure of the degree of exposure of a receptor to a pressure to which it is sensitive. *Based on Hiscock et al. 1999; Oakwood Environmental Ltd (2002).*

Site vulnerability depends on a range of factors:

- The projected impacts on species and habitats;
- The adaptive capacity / resilience of those species and habitats at the site, as a result of conditions on the site.

The degree to which a system is susceptible to, and unable to cope with, adverse effects; vulnerability is a function of the character, magnitude, and rate of effects and variation to which a system is exposed, its sensitivity, and its adaptive capacity.

Exposure - the nature and degree to which a system is exposed to effects.

Sensitivity - the degree to which a system is affected, either adversely or beneficially, by effects.

Adaptive capacity - the ability of a system to adjust to effects; to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.

Resilience - the amount of change a system can undergo without changing state.

Vulnerabilities used (some overlap).	Related vulnerabilities taken directly from Appendix 1 and representations made at the preferred strategy stage.
Afforestation	Afforestation, Inappropriate tree planting, Woodland management, Tree Regeneration, Habitat management.
Burning and Cutting	Burning and Cutting.
Climate Change	Climate change issues (e.g. warming sea water temperature, sea level rise, increase storminess).
Competition: non-native (invasive species)	Competition, Competition from non-native species, Control of invasive non-native trees and shrubs, Introduction/invasion of non-native plant species, Invasive, non-native trees and shrubs, Invasive, non-native trees and shrubs, Invasive non-native species, Impact of wildlife, Predatory fish, Food availability, Competition and Stocking, Development, Agricultural processes and Invasive species.
Competition: species (invasive species)	Competition, Competition and Stocking, Introduction of invasive plants Introduction of invasive species, Invasive plants, Invasive

	species, Fish Introduction.
Deforestation	Woodland management, Channel Management, Land Use & Management, Habitat management.
Disturbance	Development and disturbance, Coastal & flood defence, Development & improved infrastructure to strengthen safety, Disturbance, Human Disturbance, Leisure and Recreation, Major development projects and pollution, Off road vehicles, Quarrying, Roads/development Tourism/Disturbance, Recreation, Recreational pressure from walkers and rock climbers, Vandalism, Litter & debris, Land Use & Management, Peat Cutting, Development Pressure, High speed power craft (including PWCs), Dumping and vandalism (via urban areas and cars).
Drainage	Drainage, Grazing, Burning, Drainage, Land Use & Management, Channel Management.
Dredging	Dredging
Entrainment	Barriers restricting migration
Impingement	Barriers restricting migration
Migration barrier	Barriers restricting migration, Coastal & flood defence, Construction, Development & Migration Barriers, Safety, Migration Barriers, Development Pressure.
Over grazing	Animal Grazing, Over grazing, Vegetation Cover, Decline in species, Habitat management.
Parasites and Disease	Parasites, Competition and stocking.
Persecution	Persecution, Harvesting of marine resources (commercial and non-commercial): need for improved management and regulatory regime to prevent damage to SAC features and support sustainable harvesting regimes.
Pollution: Acidification	Atmospheric Pollution/Acidification, Weather conditions/Acidification, Natural processes, Roads/development.

Pollution: Air	
Pollution: Atmospheric deposition	Atmospheric deposition, Atmospheric pollution, Air- and water-borne pollution, Air pollution.
Pollution: Contamination (elements (inc. metals) &/or chemicals)	Contamination and Development Pollution – pesticides/agricultural runoff, Quarrying, Roads/development, Old municipal dump at SH702346, Litter & debris, Land Use & Management.
Pollution: Dust	Quarrying, Roads/development.
Pollution: Erosion	Access & Recreational Use, Erosion, Land erosion, Off road vehicles, Recreational activities, Recreation and Leisure, Recreation within gorges.
Pollution: Flooding	Flooding, Agricultural run-off, Water run-off, Land Use & Management.
Pollution: Nutrients (input and enrichment)	Agricultural pollution, Agricultural processes, Eutrophication, Nutrient input, Nutrient run-off, Nutrient levels, Land Use & Management.
Pollution: Sedimentation	Increase in sediments, Sedimentation / Siltation, Sedimentation (diffuse and point sources), Land Use & Management.
Pollution: Water Quality	Pollution and Water Quality, Water quality and nutrient enrichment, Water Quality, Water Pollution, Land Use & Management, Impact of introducing stored (different temperature) water.
Private abstraction	Water Abstraction & Channel Morphology, Effect of River abstraction
Scrub Encroachment	Grazing and Scrub encroachment, Scrub encroachment, Scrub and invasive species clearance
Seasonality of Grazing	Level of Grazing, Vegetation Cover
Stocking Density	Animal Grazing, Vegetation Cover, Fish Stocking, Competition and Stocking
Type of grazing	Animal Grazing, Livestock Grazing

Under grazing	Animal Grazing, Vegetation Cover
Unseasonal interaction (ie, fishing during breeding season, or trampling during winter)	Fishing (poaching)
Weather conditions	

Table 2

<u><i>Vulnerability</i></u>	<u><i>Could a Local Development Plan have an effect of the on the given vulnerability?</i></u>	<u><i>Scoped in?</i></u>	<u><i>Where yes relevant European Sites.</i></u>
<p>Afforestation</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • <i>Planting tree species amounting to a forest.</i> <p><u>Potential indirect/consequential/secondary effects</u></p> <ul style="list-style-type: none"> • <i>Drainage – water attenuation</i> • <i>Pollution: water quality – changes in pH</i> • <i>Pollution: Erosion</i> • <i>Pollution: Sedimentation</i> • <i>Disturbance – shading of other vegetation</i> • <i>Competition: non-native (invasive species)</i> • <i>Competition: introduced species (invasive species)</i> 	<p>No. Generally outside the planning system.</p> <p>Where development requires the removal of trees and vegetation, there may be the desire or obligation (planning condition) to compensate elsewhere.</p> <p>If ecological compensation, in this case afforestation, is inappropriately located then this could harmfully impact a designation regarding run-off, water quality by altering pH levels, and sediment characteristics.</p> <p>The use of planning conditions is considered reasonable to mitigate adverse impacts.</p>	<p>No.</p> <p>Forestry, like agriculture, is not development.</p> <p>The impact of small scale replanting may be controlled by imposing appropriate planning conditions.</p>	<p>N/A</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
	The function of such ecological compensation conditions, where suitable, would be to successfully avoid adverse effects to European site integrity.		
<p><i>Burning and Cutting</i></p> <p><i>Definitions:</i></p> <p><i>Burning</i></p> <ul style="list-style-type: none"> • <i>Temporary or prolonged act and/or process of consumption of material through combustion using fire.</i> <p><i>Not associated with pollution as burning plans are a measure of site management. Outside of burning plans, burning would normally be considered pollution</i></p> <p><i>Cutting</i></p> <ul style="list-style-type: none"> • <i>Cutting of vegetation.</i> <p><i>As a management practise success of this technique relies upon subsequent removal of resultant litter.</i></p>	No. Generally outside the planning system.	No. Burning and Cutting practices are outside the planning system.	N/A

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p><u>Potential indirect/consequential/secondary effects</u></p> <ul style="list-style-type: none"> • Soil fertility • Climate Change • Competition: species (invasive species) • Competition: non-native (invasive species) • Deforestation • Disturbance • Drainage • Entrainment • Impingement • Migration barrier • Over grazing • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>enrichment)</p> <ul style="list-style-type: none"> • Pollution: Water Quality • Scrub Encroachment • Type of grazing • Weather conditions 			
<p>Climate Change</p> <p><u>Definition:</u> Article 1 in the United Nations Framework Convention on Climate Change (UNFCCC)¹, defines climate change as:</p> <ul style="list-style-type: none"> • a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods <p>The UNFCCC definition makes a distinction between climate change attributable to human activities altering the atmospheric composition, and climate variability</p>	<p>Yes. Planning has direct and indirect influences on climate change.</p> <p>Direct influences can include promotion of development leading to deforestation and the working of peat soils containing methane gas.</p> <p>Indirect (incidental) influences include diffuse air pollution, acidification, burning, dust and contamination (amongst others) which all influence the dynamic equilibrium of our climate.</p> <p>These influences are likely to be very small, however they are contributory.</p>	Yes.	River Clun

¹ UNFCC http://unfccc.int/essential_background/convention/background/items/2536.php

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p><i>attributable to natural causes.</i></p> <p><u>Potential indirect/consequential/secondary effects</u></p> <ul style="list-style-type: none"> • Soil fertility • Competition: species (invasive species) • Competition: non-native (invasive species) • Deforestation • Disturbance • Drainage • Entrainment • Impingement • Migration barrier • Parasites and Disease • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>enrichment)</p> <ul style="list-style-type: none"> • Pollution: Sedimentation • Pollution: Water Quality • Private abstractions • Scrub Encroachment • Weather conditions 			
<p>Deforestation</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Removal of tree species <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Reduction in riparian shading • Habitat fragmentation – reduction in habitat connectivity • Climate Change • Competition: species (invasive species) • Competition: non-native (invasive species) • Disturbance • Drainage • Parasites and Disease • Pollution: Acidification 	<p>Yes.</p> <p>Deforestation is typically a management issue which can occur without planning authority or forestry commission consent up to a volume of 5m².</p> <p>However, planning decisions can lead to deforestation by promoting development that will lead to the loss of trees.</p>	<p>Yes.</p> <p>Site allocations may require tree removal as part of new development.</p>	<p>N/A</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Private abstractions • Scrub Encroachment • Weather conditions 			
<p>Disturbance</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Temporary or prolonged act and/or process of physical, chemical and/or acoustic intrusion, disruption, imbalance, and/or interruption from ‘normal/common’ activity <p><u>Potential indirect/consequential/secondary effects:</u></p>	<p>Yes.</p> <p>Planning can increase the likelihood of disturbance in a variety of ways.</p> <p>During the plan-making process there is the opportunity for allocations and policies to control/limit/restrict development which could potentially cause a likely significant effect to a European site.</p> <p>Where sufficient detail on a development is not available at the</p>	<p>Yes.</p> <p>Disturbance is inherent in new development and land allocation.</p>	<p>Brecon Becons Coetiroedd Cwm Elan Granllyn Montgomery Canal Mynydd Epynt Dyfi Estuary Elenydd Tanat and Vyrnwy Bat Sites Usk Bat Sites Aberbargoed Grasslands Cadair Idris Coedydd Cwm Clydach Coed Cwm Einion</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Decline in species • Habitat fragmentation – reduction in habitat connectivity • Soil fertility • Drainage • Entrainment • Migration barrier • Impingement • Competition: non-native (invasive species) • Competition: introduced species (invasive species) • Parasites and Disease • Persecution • Pollution: Acidification • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality 	<p>plan making stage, applicants may be required at planning application stage to prove with the use of robust and appropriate evidence that development will not cause a likely significant effect to the European site, either alone or in combination with other Plans, Policies and Programmes.</p>		<p>Coed y cerrig Cors Caron Cors Fochno Meirionnydd Oakwood and bat sites Cwm Cadlan Cwm Doethie Mynydd Mallaen River Teifi Craig yr Aderyn Meirionnydd Oakwood and Bat Sites Johnstown Newt Sites, Migneint-Arenig-Dduallt Lleyn Peninsula and the Sarnau Downton Gorge River Clun The Stiperstones and the Hollies Midland Meres</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • <i>Private abstractions</i> • <i>Scrub Encroachment</i> • <i>Weather conditions</i> 			
<p>Drainage</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • <i>Temporary or prolonged act and/or process of negatively altering water content effecting a EU site beyond the tolerance of qualifying features and/or habitats</i> <p><i>These could be reducing drainage creating saturation and 'water runoff' or increasing drainage creating 'draw-down' on the EU site beyond the tolerance of qualifying features and/or habitats.</i></p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • <i>Decline in Species</i> • <i>Habitat fragmentation – reduction in habitat</i> 	<p>Yes.</p> <p>Planning can influence drainage of land both through land allocation and decisions on detailed planning applications.</p> <p>During the plan-making process there is the opportunity for allocations and policies to control/limit/restrict development which could potentially cause a likely significant effect to a European site.</p> <p>Where sufficient detail on a development is not available at the plan making stage, applicants may be required at planning application stage to prove with the use of robust and appropriate evidence that development will not cause a likely significant effect to the European site, either alone or in combination with</p>	<p>Yes.</p> <p>Drainage is an issue for all new development and land allocations.</p>	<p>Coetiroedd Cwm Elan Drostre Bank Mynydd Epynt Berwyn and South Clwyd Mountains Elenydd Usk Bat Sites Coed y Cerrig Cors Caron Cors Fochno Cwm Cadlan Migneint-Arenig-Dduallt Cernydd Carmel Downton Gorge Johnston Newt Site River Clun The Stiperstones and the Hollies Midland Meres</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>connectivity</p> <ul style="list-style-type: none"> • Climate Change • Deforestation • Disturbance • Drainage – water runoff • Drainage – water attenuation • Draw-down – process of water depletion, a lowering of water level which can be sudden and/or prolonged during periods of warm weather • Entrainment • Migration barrier • Impingement • Parasites and Disease • Pollution: Acidification • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Scrub Encroachment 	<p>other Plans, Policies and Programmes.</p>		

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Stocking Density 			
<p>Dredging</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Temporary and/or prolonged act and/or process of excavation (digging up) and/or abstraction (removal and transport) of material. <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Siltation (simply the deposition of fine grade material to the river bed, potentially removing spawning habitat) • Habitat fragmentation – reduction in habitat connectivity • Changes in water levels (wetted perimeter) of the channel • Changes in morphology 	<p>No.</p> <p>Dredging controlled by permit from NRW.</p>	<p>No.</p> <p>Dredging controlled by permit from NRW.</p>	<p>N/A</p>

<u><i>Vulnerability</i></u>	<u><i>Could a Local Development Plan have an effect of the on the given vulnerability?</i></u>	<u><i>Scoped in?</i></u>	<u><i>Where yes relevant European Sites.</i></u>
<p><i>(shape of channel)</i></p> <ul style="list-style-type: none"> • <i>Climate Change</i> • <i>Deforestation</i> • <i>Disturbance</i> • <i>Drainage</i> • <i>Entrainment</i> • <i>Migration barrier</i> • <i>Impingement</i> • <i>Competition: non-native (invasive species)</i> • <i>Competition: species (invasive species)</i> • <i>Pollution: Atmospheric deposition</i> • <i>Pollution: Contamination (elements (inc. metals) &/or chemicals)</i> • <i>Pollution: Erosion</i> • <i>Pollution: Flooding</i> • <i>Pollution: Nutrients (input and enrichment)</i> • <i>Pollution: Sedimentation</i> • <i>Pollution: Water Quality</i> • <i>Private abstractions</i> • <i>Scrub Encroachment</i> • <i>Weather conditions</i> 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>Entrainment</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Temporary and/or prolonged act or process serving to contain, pull, draw in, carry or suspend <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Disturbance • Migration barrier • Impingement • Persecution • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality 	<p>Yes.</p> <p>The plan supports development which in theory could result in entrainment.</p>	<p>Yes.</p> <p>The plan supports development which in theory could result in entrainment.</p>	<p>N/A</p>
<p>Migration barrier</p>	<p>Yes.</p>	<p>Yes.</p>	<p>Granllyn</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p><u>Definition:</u></p> <ul style="list-style-type: none"> • <i>Temporary and/or prolonged act or process of physical, chemical, and/or acoustic barrier acting to inhibit and/or prohibit migratory movement of species</i> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • <i>Decline in Species</i> • <i>Habitat fragmentation – reduction in habitat connectivity</i> • <i>Changes in water levels (wetted perimeter) of the channel</i> • <i>Changes in morphology (shape) of channel</i> • <i>Climate Change</i> • <i>Disturbance</i> • <i>Drainage</i> • <i>Entrainment</i> • <i>Impingement</i> • <i>Pollution: Acidification</i> • <i>Pollution: Atmospheric</i> 	<p>An example of this would be where hydro-electricity could be generated through the use of a weir system. Not only would the weir system represent a physical barrier to migrating species (where no passing places are provided), but it may additionally change river channel geometry potentially causing changes to patterns of erosion and deposition, and depth, velocity and duration of flows. The same impacts may also be realised with applications to improve current capacity of hydro-electricity generation. Consultation with the EA and CCW would inform of the acceptability of such a development in addition to the correct practise to mitigate adverse impacts.</p>	<p>Development has the potential to cause and exacerbate existing migration barriers.</p> <p>Mitigation measures are included to protect different development types.</p>	<p>River Usk River Wye Tanat and Vyrnwy Bat Sites Berwyn and South Clwyd Mountains Cors Fochno River Teifi River Dee and Bala Lake Downton Gorge Johnston Newt Site River Clun The Stiperstones and the Hollies Midland Meres</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>deposition</p> <ul style="list-style-type: none"> • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Scrub Encroachment • Weather conditions 			
<p>Impingement</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Temporary and/or prolonged act or process of physically impeded from full mobility within its habitat at a point location (point specific). <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – 	<p>Yes</p> <p>An example of this would be, if a settlement had reached the capacity of existing discharge and abstraction consents to a river, but within that settlement, there is a developable site for 20 dwellings. This would likely necessitate an increase to the capacity of the discharge and abstraction as a pre-requisite to the commencement and completion of the development. However, this could harmfully impact a designation</p>	<p>Yes</p> <p>Development has the potential to impact on migration barriers.</p> <p>Mitigation measures are included to protect different development types.</p>	<p>River Tywi River Usk River Wye River Teifi River Dee and Bala Lake River Clun</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>reduction in habitat connectivity</p> <ul style="list-style-type: none"> • Changes in water levels (wetted perimeter) of the channel • Changes in morphology (shape) of channel • Disturbance • Drainage • Entrainment • Migration barrier • Competition: non-native (invasive species) • Competition: species (invasive species) • Over grazing • Parasites and Disease • Persecution • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality 	<p>regarding qualifying features sensitive to 'impingement' as an impact brought about by water abstraction. An example of such a qualifying feature would be the juvenile shad.</p> <p><u>How planning can mitigate</u> Assuming the development is considered acceptable, the use of justified and reasonable planning conditions as a mechanism of acceptable control can be considered to mitigate adverse impacts.</p>		

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Private abstractions • Scrub Encroachment • Weather conditions 			
<p>Competition: non-native (invasive species)</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • An organism (plant, animal, fungus, or bacterium) that is not native and competes with qualifying features to their detriment. • An organism (plant, animal, fungus, or bacterium) that is not native and has negative effects on biodiversity sometimes impacting native species. <p>Not all non-native species are 'invasive' in every case.</p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species 	<p>No.</p> <p>Planting of non-native species is outside the control of planning system and is more dependent on the management of the site.</p>	<p>No.</p>	<p>N/A</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Soil fertility • Habitat fragmentation – reduction in habitat connectivity • Afforestation • Deforestation • Disturbance • Drainage • Entrainment • Migration barrier • Impingement • Over grazing • Parasites and Disease • Persecution • Pollution: Acidification • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Scrub Encroachment • Type of grazing • Under grazing 			
<p>Competition: native species (invasive species)</p> <p>Definition:</p> <ul style="list-style-type: none"> • An organism (plant, animal, fungus, or bacterium) that 	<p>No.</p> <p>Planting of competitive native species is outside the control of planning system and is more dependent on the management of the site.</p>	No.	N/A

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>competes with qualifying features and/or alters habitats negatively affecting the biodiversity of a protected site.</p> <p>Not all native species are ‘invasive’ in every case.</p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Soil fertility • Habitat fragmentation – reduction in habitat connectivity • Afforestation • Deforestation • Disturbance • Drainage • Entrainment • Migration barrier • Impingement • Over grazing • Parasites and Disease • Persecution • Pollution: Acidification 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Scrub Encroachment • Type of grazing • Under grazing 			
<p>Over grazing</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Too much vegetation being eaten <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Climate Change • Deforestation • Disturbance • Drainage • Entrainment • Migration barrier • Impingement • Competition: non-native 	<p>No.</p> <p>Typically outside the planning system. Too many animals stocked on the land could cause an adverse impact through erosion, sedimentation and/or water runoff.</p>	<p>No.</p>	<p>N/A</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p><i>(invasive species)</i></p> <ul style="list-style-type: none"> • Competition: species (invasive species) • Parasites and Disease • Pollution: Acidification • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Scrub Encroachment • Seasonality of Grazing • Stocking Density • Type of grazing • Under grazing • Unseasonal interaction (ie, fishing during breeding season, or trampling during winter) 			
Parasites and Disease	No.	No.	N/A

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p><u>Definition:</u></p> <ul style="list-style-type: none"> <i>An abnormal and/or harmful condition of part, or all of organic system (plant, animal, fungus, or bacterium) resulting from various causes, such as infection, genetic defect, or environmental stress (amongst others), and characterised by an identifiable group of signs and symptoms</i> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> <i>Decline in Species</i> <i>Habitat fragmentation – reduction in habitat connectivity</i> <i>Deforestation</i> <i>Disturbance</i> <i>Drainage</i> <i>Migration barrier</i> <i>Impingement</i> <i>Competition: non-native</i> 	<p>Typically outside the planning system and would be more dependent on management of the site.</p>		

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p><i>(invasive species)</i></p> <ul style="list-style-type: none"> • Competition: species (invasive species) • Persecution • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Scrub Encroachment 			
<p>Persecution</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Temporary and/or prolonged act and/or process of bothering, ill-treating and/or harassing from 'normal/common' activity <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Burning and Cutting • Climate Change • Deforestation 	<p>No.</p> <p>Typically outside the planning system as it would be more dependent on vigilance, surveillance and interpretation of trends as regards to site management.</p>	<p>No.</p> <p>The planning system does not have direct implications for persecution.</p>	<p>N/A</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • <i>Disturbance</i> • <i>Drainage</i> • <i>Entrainment</i> • <i>Migration barrier</i> • <i>Impingement</i> • <i>Competition: non-native (invasive species)</i> • <i>Competition: species (invasive species)</i> • <i>Parasites and Disease</i> • <i>Persecution</i> • <i>Seasonality of Grazing</i> • <i>Unseasonal interaction</i> • <i>Weather conditions</i> 			
<p><i>Pollution: Acidification</i></p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • <i>Process of acidifying (making more acidic) air, soil, and/or water.</i> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • <i>Decline in Species</i> • <i>Soil fertility</i> • <i>Habitat fragmentation –</i> 	Yes. Development management polices address pollution.	Yes.	Coetiroedd Cwm Elan Dyfi Estuary Cwm Doethie Mynydd Mallaen

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>reduction in habitat connectivity</p> <ul style="list-style-type: none"> • Afforestation • Climate Change • Deforestation • Disturbance • Drainage • Entrainment • Migration barrier • Impingement • Competition: non-native (invasive species) • Competition: species (invasive species) • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Scrub Encroachment • Seasonality of Grazing • Stocking Density • Type of grazing • Weather conditions 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>Pollution: Air</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> <i>Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere².</i> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> <i>Decline in Species</i> <i>Soil fertility</i> <i>Habitat fragmentation – reduction in habitat connectivity</i> <i>Climate Change</i> <i>Deforestation</i> <i>Disturbance</i> <i>Drainage</i> <i>Entrainment</i> <i>Migration barrier</i> <i>Impingement</i> 	<p>Yes. Development management polices address air pollution.</p>	<p>Yes.</p>	<p>Brecon Beacons Rhos-Goch Coedydd Nedd a Mellte, Elenydd, Blaen Cynon, Coedydd Cwm Clydach, Sugarloaf Woodlands, Cwm Cadlan, Migneint-Arenig-Dduallt, Downton Gorge</p>

² World Health Organisation http://www.who.int/topics/air_pollution/en/index.html

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Pollution: Acidification • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Weather conditions 			
<p>Pollution: Atmospheric deposition</p> <p><u>Definition:</u> The following definition has been informed by Department for Environment Food and Rural Affairs (DEFRA)³</p> <ul style="list-style-type: none"> • Act and/or process of depositing air pollutants to earth (land, water etc) <p>Air pollutants are removed from the atmosphere through ‘wet deposition’, by rain, snow and fog, and by ‘dry deposition’, which is the</p>	<p>Yes. Development management polices address atmospheric deposition.</p>	<p>Yes.</p>	<p>Coetiroedd Cwm Elan Cwm Cadlan Cwm Doethie Mynydd Mallaen River Teifi Migneint-Arenig-Dduallt,</p>

³ DEFRA – UK Pollutant Deposition <http://pollutantdeposition.defra.gov.uk/> (04/July/2013)

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>direct uptake of gases and particles to land and water surfaces.</p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Soil fertility • Habitat fragmentation – reduction in habitat connectivity • Climate Change • Deforestation • Disturbance • Drainage • Entrainment • Migration barrier • Impingement • Parasites and Disease • Pollution: Acidification • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Scrub Encroachment 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • <i>Unseasonal interaction</i> • <i>Weather conditions</i> 			
<p><i>Pollution: Contamination (elements (inc. metals) &/or chemicals)</i></p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • <i>Act and/or process of material, being elemental and/or chemical in nature, being apparent at a site at an 'abnormal' level and/or beyond the tolerances of qualifying features/habitat</i> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • <i>Decline in Species</i> • <i>Soil fertility</i> • <i>Habitat fragmentation – reduction in habitat connectivity</i> • <i>Climate Change</i> • <i>Deforestation</i> • <i>Disturbance</i> • <i>Drainage</i> • <i>Entrainment</i> 	<p>Yes. Development management polices address contamination and unstable land.</p>	<p>Yes.</p>	<p>Granllyn, Lleyn Peninsula and the Sarnau Elenydd River Usk, River Wye, Usk Bat Sites Coedydd Cwm Clydach Meirionnydd Oakwood and bat sites Afon Eden – Cors Goch Trawsfynydd Johnstown Newt Sites, River Dee and Bala Lake, Downton Gorge, River Clun, The Stiperstones and the Hollies. Midland Mires.</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Migration barrier • Impingement • Competition: non-native (invasive species) • Competition: species (invasive species) • Parasites and Disease • Pollution: Acidification • Pollution: Atmospheric deposition • Pollution: Dust • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Scrub Encroachment • Unseasonal interaction • Weather conditions 			
<p>Pollution: Dust</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Act and/or process of fine 'dust' material present in air, water and/or soil <p><u>Potential indirect/consequential/secondary effects:</u></p>	Yes. Development management policies address air pollution including dust.	Yes	Cwm Cadlan

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Siltation (simply the deposition of fine grade material to the river bed, potentially removing spawning habitat) • Burning and Cutting • Climate Change • Deforestation • Disturbance • Entrainment • Migration barrier • Impingement • Competition: non-native (invasive species) • Competition: species (invasive species) • Parasites and Disease • Pollution: Acidification • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Nutrients (input and 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>enrichment)</p> <ul style="list-style-type: none"> • Pollution: Water Quality • Under grazing • Weather conditions 			
<p>Pollution: Erosion</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • A process whereby material is worn away (removed and transported) from a point resulting in a change in geometry (shape) at that point <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Soil fertility • Sediment suspension • Changes in water levels (wetted perimeter) of the channel • Changes in morphology (shape of channel) 	<p>Yes.</p> <p>Development management polices address erosion through drainage management and land management.</p> <p><u>Planning pressure</u> Typically outside the planning system as it would be more dependent on the management of the site.</p> <p>However, planning decisions can increase the vulnerability of qualifying features to erosion in certain circumstances. An example being a proposal to site a tourist development such as log cabins, and/or a caravan and camping site close to a European site. Consequences of this development range from potential increased footfall on or proximate to European designations, to potential motorsport recreational uses which cause increased stress and</p>	<p>Yes.</p>	<p>Brecon Beacons Coedydd Llawr-y-Glyn Coetiroedd Cwm Elan Ganllyn Mynydd Epynt Berwyn and South Clwyd Mountains Coedydd Nedd a Mellte River Wye Usk Bat sites Cadair Idris Coed Cwm Einion Cors Caron Johnston Newt site Cernydd Carmel</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Climate Change • Deforestation • Disturbance • Drainage • Dredging • Entrainment • Migration barrier • Impingement • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Weather conditions 	<p>vulnerability to the site.</p> <p><u>How planning can mitigate</u> At planning application stage, in consultation with the Countryside Council for Wales there may be mitigation measures which could be attached as planning conditions (where reasonable and appropriately justified) to the planning permission for the purposes of protecting areas susceptible to erosion thus, mitigating adverse impacts to site integrity.</p>		
<p>Pollution: Flooding</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • “Flood” includes any case where land not normally 	<p>Yes.</p> <p><u>Planning pressure</u> River Flood Management is the responsibility of Natural Resources</p>	<p>Yes.</p> <p>Development management polices address flooding.</p>	<p>Cors Fochno Downton Gorge Johnston Newt Site River Clun The Stiperstones and</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>covered by water becomes covered by water⁴ from a river source</p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Siltation (simply the deposition of fine grade material to the river bed, potentially removing spawning habitat) • Sediment suspension • Changes in water levels (wetted perimeter) of the channel • Changes in morphology (shape of channel) • Climate Change • Deforestation • Disturbance • Drainage 	<p>Wales.</p> <p>Planning decisions can increase the vulnerability of qualifying features to flooding in certain circumstances.</p> <p>The development itself may not be sited within a flood zone, however, the provision of impermeable surfaces including concrete works, roadways and footpaths would likely reduce the time taken from it raining to the water reaching the watercourse.</p> <p>Such a reduction in this time places stress on the watercourse as it reaches capacity over a shorter time period thus, more likely to overtop. Consequences of this include downstream flooding perhaps in areas which had not previously experienced flooding.</p> <p>At planning application stage, where a developer can prove with the use of robust and appropriate evidence that</p>		<p>the Hollies Midland Mires</p>

⁴ Flood and Water Management Act, 2010 section 1 <http://www.legislation.gov.uk/ukpga/2010/29/part/1/crossheading/1-key-concepts-and-definitions>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Dredging • Entrainment • Migration barrier • Impingement • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Weather conditions 	<p>development will not cause a likely significant effect to the European site alone or in combination, the development may be considered acceptable, subject to other constraints and considerations in the planning process in accordance with development plan policies.</p>		
<p>Pollution: Nutrients (input and/or enrichment)</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Temporary and/or prolonged act and/or process of elevated nutrient availability (enrichment) into an earth system, beyond the 	<p>Yes.</p> <p>Policies address nutrient pollution.</p> <p><u>Planning pressure</u> Typically outside the planning system as it would be more dependent on the management of the site. However, planning decisions can increase the</p>	<p>Yes.</p>	<p>Coedydd Llawr-y-Glyn Llangorse Lake Montgomery Canal Rhos Goch Llyn Peninsulat and Sarnau Coedydd Nedd a Mellte Elenydd River Tywi</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>tolerances for qualifying features/habitat</p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Soil fertility • Habitat fragmentation – reduction in habitat connectivity • Climate Change • Competition: non-native (invasive species) • Competition: species (invasive species) • Deforestation • Disturbance • Drainage • Entrainment • Impingement • Migration barrier • Over grazing • Parasites and Disease • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition 	<p>vulnerability of qualifying features to nutrients in certain circumstances. An example would be a proposal for an agricultural diversification enterprise such as a poultry Free Range Egg Production (FREP) unit. This intensive form of enterprise could introduce additional nutrients such as nitrogen and phosphorus and disinfectant-type elements via surface run-off, and groundwater flows to European sites where not correctly or appropriately disposed of in a timely manner.</p> <p><u>How planning can mitigate</u> During the plan-making process, Powys County Council as the competent authority can adopt a threshold approach related to the critical load/level of a given statutory protected site (SPA, SAC etc). The threshold approach is the process contribution as a percentage of the critical level. In other words, the sites should/will have an upper limit (threshold) and then it is up to developers to prove that alone or in-combination (with existing, proposed new units or extensions of units) the</p>		<p>River Wye Blaen Cynon Coes y cerrig Sugarloaf woodlands Cwm Cadlan Grogwynion River Dee and Bala Lake Cernydd Carmel River Clun Midland Meres Downton Gorge Johnston Newt Site The Stiperstones and the Hollies.</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Water Quality • Scrub Encroachment • Weather conditions 	<p>development proposed does not cause a likely significant effect (by exceeding the threshold). This must also be conducted also taking into account the existing background levels.</p> <p>Where a developer can prove with the use of robust and appropriate evidence alone or in combination (perhaps using the above example approach) that development will not cause a likely significant effect to the European site, the development may be considered acceptable, subject to other constraints and considerations in the planning process.</p>		
<p>Pollution: Sedimentation</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Process and/or act of depositing material (soil, rock etc) <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species 	<p>Yes. Flooding and drainage policies address sedimentation</p> <p><u>Planning pressure</u> Typically outside the planning system as it would be more dependent on the management of the site. However, planning decisions can increase the vulnerability of qualifying features to sedimentation in certain</p>	Yes.	<p>Llangorse Lake River Wye River Clun Downton Gorge Johnston Newt Site The Stiperstones and the Hollies Midland Mires</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Soil fertility • Habitat fragmentation – reduction in habitat connectivity • Siltation (simply the deposition of fine grade material to the river bed, potentially removing spawning habitat) • Competition: non-native (invasive species) • Competition: species (invasive species) • Disturbance • Drainage • Entrainment • Impingement • Migration barrier • Pollution: Acidification • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Weather conditions 	<p>circumstances.</p> <p>An example would be a proposal for a motocross track within a river catchment. Such a use will likely have consequences in terms of erosion, sedimentation, and water run-off due to increase ground compaction along the race track. The use would not necessarily be within the European designation although, given that it is within the catchment, transient (easily transferable) processes such as water run-off from the track would function to carry the material to the watercourse thus, increase the sedimentation to the designation.</p> <p><u>How planning can mitigate</u></p> <p>At planning application stage, in consultation with the Countryside Council for Wales there may be mitigation measures which could be attached as planning conditions (where reasonable and appropriately justified) to the planning permission for the purposes of protecting areas susceptible (ie, qualifying features which require certain habitat</p>		

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
	conditions) to sedimentation thus, mitigating adverse impacts to site integrity. However, in all likelihood, such vulnerability would be prohibitive to this type of development given the transient (easily transferable) nature of the vulnerability.		
<p>Pollution: Water Quality</p> <p>Definition:</p> <ul style="list-style-type: none"> The chemical, physical and biological characteristics of water <p>e.g.</p> <ul style="list-style-type: none"> - water pH - water temperature - nutrient load water <p>Potential indirect/consequential/secondary effects:</p> <ul style="list-style-type: none"> Decline in Species Soil fertility Habitat fragmentation – reduction in habitat connectivity 	<p>Yes. Development management policies address water quality.</p> <p>Factor is 'overarching' thus, found elsewhere in:</p> <ul style="list-style-type: none"> nutrients water run-off sedimentation pollution erosion contamination dust disturbance 	Yes.	<p>Granllyn Llangorse Lake Montgomery Canal Llyn Peninsulat and Sarnau River Tywi River Usk River Wye River Teifi Downton Gorge Afon Eden – Cors Goch Trawsfynydd Johnston Newt site River Dee and Bala Lake River Clun Downton Gorge The Stiperstones and the Hollies Midland Mires</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Removal of breeding and/or nesting habitat • Siltation (simply the deposition of fine grade material to the river bed, potentially removing spawning habitat) • Changes in channel morphology (channel shape) • Climate Change • Competition: non-native (invasive species) • Competition: species (invasive species) • Disturbance • Drainage • Entrainment • Impingement • Migration barrier • Parasites and Disease • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Erosion 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • <i>Pollution: Flooding</i> • <i>Pollution: Nutrients (input and enrichment)</i> • <i>Pollution: Sedimentation</i> • <i>Unseasonal interaction</i> • <i>Weather conditions</i> 			
<p>Scrub Encroachment</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • <i>Temporary or prolonged movement of 'scrub' species into an area which should be the reserve of a controlled mix of species (protected or otherwise) to maintain an ecological balance.</i> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • <i>Decline in Species</i> • <i>Soil fertility</i> • <i>Habitat fragmentation – reduction in habitat connectivity</i> • <i>Removal of breeding and/or nesting habitat</i> 	No. Outside the planning system.	No.	N/A

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Afforestation • Burning and Cutting • Climate Change • Competition: non-native (invasive species) • Competition: species (invasive species) • Deforestation • Disturbance • Drainage • Entrainment • Impingement • Migration barrier • Over grazing • Parasites and Disease • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Water Quality • Seasonality of Grazing • Stocking Density 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> Type of grazing Under grazing 			
<p>Stocking Density</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> Too many or not enough of a given species (invariably in competition with each other) per hectare on a temporary or prolonged basis. <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> Decline in Species Habitat fragmentation – reduction in habitat connectivity Soil fertility Climate Change Competition: non-native (invasive species) Competition: species (invasive species) Deforestation Disturbance Drainage 	No. Outside the Planning System.	No.	N/A

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • <i>Entrainment</i> • <i>Impingement</i> • <i>Migration barrier</i> • <i>Over grazing</i> • <i>Parasites and Disease</i> • <i>Pollution: Acidification</i> • <i>Pollution: Air</i> • <i>Pollution: Atmospheric deposition</i> • <i>Pollution: Dust</i> • <i>Pollution: Erosion</i> • <i>Pollution: Nutrients (input and enrichment)</i> • <i>Pollution: Sedimentation</i> • <i>Pollution: Water Quality</i> • <i>Scrub Encroachment</i> • <i>Type of grazing</i> • <i>Under grazing</i> • <i>Unseasonal interaction</i> 			
<p>Type of grazing</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • <i>Whether the type of animal grazing is appropriate on the site, whether horses, sheep, cows, or goats etc.</i> <p><i>Inappropriate grazing animals</i></p>	No. Outside the Planning System.	No.	N/A

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>could give rise to secondary effects</p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Soil fertility • Climate Change • Competition: non-native (invasive species) • Competition: species (invasive species) • Deforestation (potential impact on saplings and new growth) • Disturbance • Drainage • Entrainment • Impingement • Migration barrier • Over grazing • Parasites and Disease • Pollution: Acidification • Pollution: Air 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Scrub Encroachment • Stocking Density • Type of grazing • Under grazing • Unseasonal interaction (ie, fishing during breeding season, or trampling during winter) • Weather conditions 			
<p>Under grazing</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Not enough vegetation being eaten 	No. Outside the Planning System.	No.	N/A

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Afforestation • Climate Change • Disturbance • Drainage - water attenuation (considered most likely) • Entrainment • Impingement • Migration barrier • Parasites and Disease • Persecution • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p>enrichment)</p> <ul style="list-style-type: none"> • Pollution: Sedimentation • Pollution: Water Quality • Scrub Encroachment • Stocking Density • Type of grazing • Under grazing • Unseasonal interaction (ie, fishing during breeding season, or trampling during winter) • Weather conditions 			
<p>Unseasonal interaction</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • Temporary and/or prolonged interaction during times of 'stress' or time periods of 'abnormally' high vulnerability. <p>An example, winter is recognised here as a time of 'stress' thus, grazing can adversely affect the site potentially increasing susceptibility to secondary effects. An example of periods of 'abnormally' high vulnerability would be during</p>	<p>Yes.</p> <p>The LDP can reinforce protection from unseasonal interaction through polices and planning conditions.</p>	<p>Yes.</p>	<p>N/A</p>

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<p><i>prolonged periods of warm weather insofar as causing a 'stress' on the vegetation affecting the site and potentially increasing susceptibility to secondary effects.</i></p> <p><i>An example for a watercourse habitat could include fishing during breeding season recognised as both a period of 'stress' and 'abnormally' high vulnerability thus, can adversely affect the site potentially increasing susceptibility to secondary effects.</i></p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • <i>Decline in Species</i> • <i>Habitat fragmentation – reduction in habitat connectivity</i> • <i>Seasonality of Grazing – temporary and/or prolonged grazing during times of 'stress' or time periods of 'abnormally' high vulnerability</i> • <i>Soil fertility</i> • <i>Climate Change</i> 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Competition: non-native (invasive species) • Competition: species (invasive species) • Deforestation • Disturbance • Drainage • Entrainment • Impingement • Migration barrier • Over grazing • Parasites and Disease • Persecution • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Scrub Encroachment 			

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Stocking Density • Type of grazing • Under grazing 			
<p>Weather Conditions</p> <p><u>Definition:</u></p> <ul style="list-style-type: none"> • State of the atmosphere in a given time and place <p>An example includes heavy rainfall which potentially increases the susceptibility of species and habitat to secondary effects.</p> <p><u>Potential indirect/consequential/secondary effects:</u></p> <ul style="list-style-type: none"> • Decline in Species • Habitat fragmentation – reduction in habitat connectivity • Soil fertility • Climate Change • Deforestation • Disturbance • Drainage • Entrainment • Impingement 	No. Outside the planning system.	No.	N/A

<u>Vulnerability</u>	<u>Could a Local Development Plan have an effect of the on the given vulnerability?</u>	<u>Scoped in?</u>	<u>Where yes relevant European Sites.</u>
<ul style="list-style-type: none"> • Migration barrier • Parasites and Disease • Pollution: Acidification • Pollution: Air • Pollution: Atmospheric deposition • Pollution: Contamination (elements (inc. metals) &/or chemicals) • Pollution: Dust • Pollution: Erosion • Pollution: Flooding • Pollution: Nutrients (input and enrichment) • Pollution: Sedimentation • Pollution: Water Quality • Scrub Encroachment • Under grazing • Unseasonal interaction • Weather conditions 			

Stages 5 & 6.

Table of 'screened in' vulnerabilities by European Site.

Colours indicate whether further screening of the Powys LDP is required, given its spatial jurisdiction and location of the European Site.

Green = Further more detailed screening required.

Red = Site may be screened out. Reasons provided in table below.

Site Name	Site designation	Climate Change	Deforestation	Disturbance	Drainage	Entrainment	Impingement	Migration barrier	Pollution: Acidification	Pollution: Air	Pollution: Atmospheric deposition	Pollution: Contamination (elements (inc. metals) &/or chemicals)	Pollution: Dust	Pollution: Erosion	Pollution: Flooding	Pollution: Nutrients (input and enrichment)	Pollution: Sedimentation	Pollution: Water Quality	Unseasonal interaction
Within Powys:																			
Brecon Beacons	SAC			yes						yes				yes					
Coedydd Llawr-y-Glyn	SAC													yes	yes				
Coetiroedd Cwm Elan	SAC			yes	yes				yes		yes			yes					
Drostre Bank	SAC				yes														
Granllyn*	SAC			yes				yes				yes		yes				yes	
Llangorse Lake	SAC															yes	yes	yes	
Montgomery Canal*	SAC			yes												yes		yes	
Mynydd Epynt	SAC			yes	yes									yes					
Rhos-Goch	SAC									yes						yes			
Within Powys and a neighbouring area:																			
Dyfi Estuary	SPA			yes					yes										
Llyn Peninsulat and Sarnau	SAC			yes								yes				yes		yes	

Berwyn and South Clwyd Mountains	SPA,SAC				yes			yes						yes					
Coedydd Nedd a Mellte	SAC								yes					yes		yes			
Elenydd	SPA, SAC			yes	yes				yes		yes					yes			
River Tywi	SAC					yes	yes									yes		yes	
River Usk	SAC					yes	yes	yes					yes						yes
River Wye*	SAC					yes	yes	yes					yes		yes		yes	yes	yes
Tanat and Vyrnwy Bat Sites*	SAC			yes				yes											
Usk Bat Sites	SAC			yes	yes								yes		yes				
Within 15km of Powys:																			
Aberbargoed Grasslands	SAC			yes															
Blaen Cynon	SAC								yes							yes			
Cadair Idris	SAC			yes										yes					
Coedydd a Cheunant Rheidol	SAC																		
Coedydd Cwm Clydach	SAC			yes						yes		yes							
Coed Cwm Einion	SAC			yes										yes					
Coed y cerrig	SAC			yes	yes												yes		
Cors Caron	Ramsar, SAC			yes	yes									yes					
Cors Fochno	Ramsar			yes	yes			yes								yes			
Meirionnydd Oakwood and bat sites	SAC			yes								yes							
Sugarloaf woodlands	SAC								yes								yes		
Cwm Cadlan	SAC			yes	yes				yes	yes		yes				yes			
Cwm Doethie Mynydd Mallaen	SPA, SAC			yes					yes		yes								
Grogwynion	SAC															yes			

River Teifi	SAC			yes		yes	yes	yes			yes							yes	
Downton Gorge	SAC									yes								yes	
Afon Eden – Cors Goch Trawsfynydd	SAC											yes						yes	
Johnston Newt site	SAC			yes	yes			yes				yes		yes	yes	yes	yes	yes	
Migneint-Arenig-Dduallt	SPA, SAC			yes	yes					yes	yes								
River Dee and Bala Lake	SAC					yes	yes	yes				yes				yes		yes	
Cernydd Carmel	SAC				yes									yes		yes			
Crymlyn Bog	Ramsar, SAC																		
Craig yr Aderyn	SPA			yes															
River Clun	SAC	yes		yes	yes	yes	yes	yes				yes			yes	yes	yes	yes	
The Stiperstones and the Hollies	SAC			yes	yes			yes				yes			yes	yes	yes	yes	
Llyntegid (this needs adding to Appendix 1)	Ramsar															yes			
Midland Meres	Ramsar			yes	yes			yes				yes			yes	yes	yes	yes	

Site Name	Reason for screening out
Brecon Beacons	The SAC is vulnerable to the direct impacts of disturbance and erosion and also from air pollution is over 10km from the Powys Local Development Plan's planning area. Furthermore the Brecon Beacons National Park Authority (BBNPA) screened out the SAC as having the potential to be impacted on by development proposals in its Local Development Plan.
Coedydd Llawr-y-Glyn	The vulnerabilities detailed for this SAC are outside control of the Powys LDP.
Coedydd Nedd a Mellte	The vulnerabilities detailed for this SAC are generally direct pressures which are outside control of the LDP. The SAC does not sit within the Powys Local Development Plan's planning area
River Tywi	The vulnerabilities detailed for this SAC are outside the influence of the Powys LDP, it is away from the planning area and separated by the watershed.

Aberbargoed Grasslands	The SAC is vulnerable to the direct impacts and it is removed from the LPA area by the BBNPA LDP planning area.
Cadair Idris	Direct vulnerabilities and conservation objectives relate to land management outside the Powys planning area
Coedydd a Cheunant Rheidol	Vulnerability relates to non-native species, outside the Powys planning area and control of the LDP.
Coedydd Cwm Clydach	This SAC is over 15km away from the Powys LDP planning area. Furthermore the Brecon Beacons National Park Authority (BBNPA) screened out the SAC as having the potential to be impacted on by development proposals in its Local Development Plan.
Coed Cwm Einion	The vulnerabilities and conservation objectives relate to land management issues outside the Powys LDP planning area.
Coed y cerrig	This SAC is over 15km away from the Powys LDP planning area. Furthermore the Brecon Beacons National Park Authority (BBNPA) screened out the SAC as having the potential to be impacted on by development proposals in its Local Development Plan.
Cors Caron	This SAC is managed as a nature reserve.
Sugarloaf woodlands	This SAC is over 15km away from the Powys LDP planning area. Furthermore the Brecon Beacons National Park Authority (BBNPA) screened out the SAC as having the potential to be impacted on by development proposals in its Local Development Plan.
Cwm Cadlan	This SAC is over 10km from the nearest LDP settlement – Coelbren. The site lies within Rhondda Cynon Taff planning area where it was screened it out.
Cwm Doethie Mynydd Mallaen	The vulnerabilities are predominantly land management related and the site is outside the Powys Local Development Plan planning area.
Grogwynion	The site is distant from the Powys Local Development Plan planning area and sits within Ceredigion planning area where it was screened it out.
River Teifi	The vulnerabilities detailed for this SAC are outside the influence of the Powys LDP, it is away from the planning area and separated by the watershed.
Downton Gorge	This SAC is over 10km away from the Powys LDP planning area.
Afon Eden – Cors Goch Trawsfynydd	The site is distant from the Powys LDP planning area and so it is considered that the stated vulnerabilities will not be affected by development in Powys.
Johnston Newt site	The site is at the edge of the 15km precautionary buffer. It is considered that the stated vulnerabilities will

	not be affected by development in Powys.
Migneint-Arenig-Dduallt	The site is distant from the Powys LDP planning area and so it is considered that the stated vulnerabilities will not be affected by development in Powys.
River Dee and Bala Lake	The vulnerabilities detailed for this SAC are outside the influence of the Powys LDP, it is away from the planning area and separated by the watershed.
Cernydd Carmel	This SAC is over 15km away from the Powys LDP planning area. Furthermore the Brecon Beacons National Park Authority (BBNPA) screened out the SAC as having the potential to be impacted on by development proposals in its Local Development Plan.
Crymlyn Bog	The vulnerabilities are predominantly land management related and the site is outside the Powys Local Development Plan planning area.
Craig yr Aderyn	The site is distant from the Powys LDP planning area and so it is considered that the stated vulnerabilities will not be affected by development in Powys.
River Clun	The site is distant from the Powys LDP planning area and so it is considered that the stated vulnerabilities will not be affected by development in Powys.
The Stiperstones and the Hollies	The vulnerabilities are predominantly land management related and the site is outside the Powys Local Development Plan planning area.
Llyntegid	The site is distant from the Powys LDP planning area and so it is considered that the stated vulnerabilities will not be affected by development in Powys.
Midland Meres	The site is distant from the Powys LDP planning area and so it is considered that the stated vulnerabilities will not be affected by development in Powys.