Appendix 1: European Site Descriptions/ Characterisations

Sites within Plan area

Special Areas of Conservation

1. Cardigan Bay
2. Carmarthen Bay and Estuaries
3. Cleddau Rivers
4. Gweunydd Blaencleddau
5. Limestone Coast of South West Wales
6. North Pembrokeshire Woodlands
7. North West Pembrokeshire Commons
8. Pembrokeshire Bat Sites and Bosherston Lakes
9. Pembrokeshire Marine
10. Preseli
11. River Teifi
12. St David's

Special Protection Areas

1. Carmarthen Bay
2. Castlemartin Coast
3. Grassholm
4. Ramsey and St David`s Peninsula Coast
5. Skokholm and Skomer

Sites outside Plan area

Special Areas of Conservation

1. Carmarthen Bay Dunes
2. Yerbeston Tops

All core site specific information, unless otherwise stated, has been referenced from the Countryside Council for Wales website (Natura 2000 Management Plans) and the Joint Nature Conservation Committee website (Protected Sites).

Special Areas of Conservation (within plan area)

Site Name: Cardigan Bay **Location Grid Ref: SN214641** **JNCC Site Code: UK0012712** **Size (ha): 95,860.36** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The Cardigan Bay marine SAC is located at the southern end of the Bay, partly in Pembrokeshire and partly in Ceredigion. Its coastal section goes from Aberarth in the north to Ceibwr, just south of the Teifi Estuary. The majority of it comprises sea: It extends 12 miles offshore and occupies 960 sq km. Most of the SAC is less than 30m deep, therefore wind and wave action dominate the physical dispersion processes. Whilst the SAC's coastal features including reefs and caves were accessory to its designation, the area was selected as it hosts some of Britain's best breeding habitat for the bottlenose dolphin. The boundary of the site was determined to encompass what was regarded as the primary area of importance for the bottlenose dolphins, though it is recognised that the species ranges widely; it is not a representation of the precise extent of any one feature. The features are distributed throughout the site; no one occupies the whole site and several overlap in places. The Bay includes two 'top' predator species features, the bottlenose dolphins and grey seal, both of which sit at the top of food chains and are therefore highly linked to biological interactions in the trophic levels of the food chain below them. Changes low in the food chain can result in quite marked effects on top predators. These food chains extend beyond the confines of Cardigan Bay, as both the dolphins and seals rely heavily on prey that spend much of their time outside the site (eg. mackerel, herring and migratory salmonids) and in turn interact with species populations some distance away. As a result, impacts to biological interactions taking place some distance spatially from the site may have a significant effect on the site's top predators.
Qualifying Features	**Annex I habitats qualifying feature:** ▪ Sandbanks which are slightly covered by sea water all the time; ▪ Reefs; ▪ Submerged or partially submerged sea caves

Site Name: Cardigan Bay **Location Grid Ref: SN214641** **JNCC Site Code: UK0012712** **Size (ha): 95,860.36** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Annex II species primary reason for selection: ▪ Bottlenose dolphin *Tursiops truncatus* **Annex II species qualifying feature:** ▪ Sea lamprey *Petromyzon marinus* ▪ River lamprey *Lampetra fluviatilis* ▪ Grey seal *Halichoerus grypus*
Conservation Objectives	▪ Objectives for the **Bottlenose Dolphin**, **Grey Seal**, **Sea Lamprey** and **River Lamprey** are to maintain at favourable conservation status their long-term population viability, natural range and the structure and function of their habitat within the SAC. ▪ Objectives for the **Reefs, Sea-caves** and **Sandbanks** features are to maintain at favourable condition status their natural range and area covered, the structures and functions necessary for their long-term maintenance, and the conservation status of their typical species on a long-term basis.
Component SSSIs	Intertidal areas of Cardigan Bay SAC Maps of the Cardigan Bay SAC are available in the Regulation 33 advice provided by CCW, available online: http://www.ccw.gov.uk/pdf/Reg%2033%20Cardigan%20Bay%20June%202005%20final.pdf
Key Environmental Conditions (factors that maintain site integrity	▪ **Hydrography, hydrodynamics & meteorology** - The mixing of warm southern currents with colder northern ones at this location is considered important. Cardigan Bay is just within the boreal (cold temperate) biogeographic region and has a temperate climate. Warmer lusitanean waters extend north as far as the Celtic deep. During summer especially, major localised 'stratification' of the shallower waters occurs. At such times warmer fresh water carried into the Bay by rivers overlays the comparatively cooler saline water.

Site Name: Cardigan Bay Location Grid Ref: SN214641 JNCC Site Code: UK0012712 Size (ha): 95,860.36 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	The climate shows strong seasonality for several environmental parameters such as temperature, rainfall, water turbidity and wind strength. ▪ **Tidal regime** - The Irish Sea is a relatively enclosed body of water with moderate tidal ranges. The distribution of seabed sediments is largely dependent on tidal current speed; gravels occur where the currents are strongest and muds where water energy is lowest. The coastal areas of Cardigan Bay are generally dominated by sands, with narrow intrusions of gravel around the sarnau, and in the 'gutter' areas adjacent to New Quay. Exposed boulders and bedrock mainly occur in regions dominated by strong tidal currents or wave action, such as headlands. Rocky areas of reef consisting of pebbles, cobbles and boulder are spread widely within the near shore areas. ▪ **Wave exposure** - Most of the SAC is less than 30m deep, with deeper areas of 30-40m depth off Aberporth and in the south western corner of the site. Because of the general shallowness of the bay, wind and wave action dominate the physical dispersion processes. The bay has a mainly open coastline, exposed to the prevailing south-westerly and westerly winds. As the Irish Sea is relatively sheltered, the majority of waves reaching the Cardigan Bay coast are locally generated, of fairly short period and therefore steep. A substantial swell also develops during prolonged periods of high winds. ▪ **Seawater temperature** - Within Cardigan Bay, there are fairly large fluctuations in water temperature, influenced by proximity to land, as well as in response to seasonal changes, and the shallowness of the bay itself. Local water temperatures are affected by the substantial input of fresh water into Cardigan Bay, and this also affects the Bay's salinity and water quality, particularly locally. ▪ **Suspended particulate (seston) concentrations & water transparency (clarity/ turbidity). Light intensity (ambient seabed and water column)** - Parts of the Irish Sea have a marked seasonal variation in turbidity and this is particularly true in Cardigan Bay. This is, in part, due to the shallow nature of the Bay, but largely due to the seasonality of wind strength and rainfall. During the summer months, suspended sediments settle

Site Name: Cardigan Bay Location Grid Ref: SN214641 JNCC Site Code: UK0012712 Size (ha): 95,860.36 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	out in the relatively calm bay, reducing turbidity. During the winter when high winds increase, bottom sediments are mixed throughout the water column and produce turbid surface waters, particularly in the near-shore zone. Turbidity of inshore waters is also strongly affected by outflow from the rivers. Within the SAC, the turbidity round the Aeron, Ina, and Teifi rivers, as well as smaller outflows, increases markedly when the rivers are in spate. ▪ **Water & sediment chemistry** - Within the Irish Sea the annual mean salinity is characterised by a decrease from south to north and from the centre of the channel to the sides. Salinity within Cardigan Bay is influenced not only by incoming Atlantic water, but also by freshwater input from rainfall, run-off from rivers and estuaries within the bay as well as the Severn, and the effects of evaporation, currents and mixing. ▪ **Biological interactions** - Cardigan Bay SAC includes both habitat and species features that together form part of Cardigan Bay's complex ecological web. Interspecific and intraspecific interactions are both complex and inter-related. Impacts to biological interactions are likely to result in changes within the ecological web well beyond the organisms originally impacted. The Bay includes two 'top' predator species features, the bottlenose dolphins and grey seal, both of which sit at the top of food chains and are therefore highly linked to biological interactions in the trophic levels of the food chain below them. Changes low in the food chain can result in quite marked effects on top predators. These food chains extend beyond the confines of Cardigan Bay, as both the dolphins and seals rely heavily on prey that spend much of their time outside the site (eg. mackerel, herring and migratory salmonids) and in turn interact with species populations some distance away. As a result, impacts to biological interactions taking place some distance spatially from the site may have a significant effect on the site's top predators. ▪ **Reefs** - The hydrography of the water column in the vicinity of reefs is dominated by wind driven wave action due to the shallowness and openness of the bay. Headlands and Cardigan Island provide the only small amount of shelter in the bay from the predominantly exposed conditions.

Site Name: Cardigan Bay Location Grid Ref: SN214641 JNCC Site Code: UK0012712 Size (ha): 95,860.36 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Caves** - Structural integrity of sea-caves is mainly determined by hydrodynamic and geomorphological processes, eg. erosion, rock falls, but may be modified by man. ▪ **Sandbanks** - The shape, size and orientation of the sandbanks are predominantly a product of tidal streams wave action and sediment budget.
SAC Condition Assessment	Not available
Vulnerabilities (includes existing pressures and trends)	▪ **Disturbance** - Human activity has the potential to cause disturbance to the Bottlenose Dolphins and seals affecting behaviour or survival potential (including waterborne leisure and commercial activities, wildlife watching), which can be unevenly distributed and has increased in recent years. Local studies have found that dolphins show changes in diving behaviour and direction when high speed boats are nearby, while there is less visible reaction to tour boats when the boats keep their distance and reduce their speed and movements. However, lack of visible short-term reactions cannot be taken to indicate a lack of adverse impact in the short or long term. Bottlenose dolphins, porpoise and seals are also vulnerable to disturbance from seismic survey for oil and gas and military/ordnance testing. ▪ **Fishing** - can have an adverse impact on the dolphins, causing injury, disturbance or death. At least one bottlenose dolphin calf has died in Cardigan Bay as a result of entanglement in a net. Factors including climate change, pollution, disease, fishing and recreational activities may all generate potentially harmful impacts. Stock status of likely prey species is generally unknown. Many, though not all, species are exploited commercially. Some likely prey species such as herring and mackerel are known to have reduced significantly in abundance in recent history through over exploitation. ▪ **Pollution** - Chemicals may enter the SAC by various routes and the potential impacts of these are influenced by the physical features of Cardigan Bay, migration by tidal movements and through sediment transport. The ingress of river water from the adjacent land and direct discharges of effluents may also

Site Name: Cardigan Bay Location Grid Ref: SN214641 JNCC Site Code: UK0012712 Size (ha): 95,860.36 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	influence the water quality of Cardigan Bay. The limited marine monitoring undertaken in Cardigan Bay has found the water quality to be good. However, sediment analysis has found significant levels of contaminants at several locations within the bay, typically associated with small harbours such as those at Aberystwyth, Aberaeron and New Quay. These have included raised levels of Tributyl Tin (TBT), Polychlorinated Biphenyls (PCBs) and metals such as lead, copper and zinc. Furthermore, analysis of tissue samples from stranded marine mammals in the area show raised levels of heavy metals, mercury and organo-halide compounds. The riverine inputs are influenced by land use and the subsequent run off and discharge of effluents have the potential to enable chemicals to pass down the rivers and into the SAC. The majority of the discharges to the SAC, consented by EAW, are of domestic sewage effluent with a few being from an industrial source. However, diffuse run off and effluent from agricultural land and the continuing impact from historic mining activity provide the major landward inputs in central Cardigan Bay. The scale and significance of contaminant input from outside the site, via the movement of marine waters and sediments or the movement of marine organisms (eg. dolphin prey), is not known. Pollution is a real threat to the health of the Cardigan Bay dolphins and their environment. The dolphins are also vulnerable to diseases such as brucellosis and morbilliviruses, as well as cross infections from interactions with humans. Environmental contaminants, particularly mercury and PCBs, are identified as a concern by CCW. At least one calf (and therefore its mother) has been recorded as containing high levels of anthropogenically-derived contaminants (PCBs). Prey contamination by pollutants is also a concern although the degree to which current levels are detrimentally affecting the dolphins is not known. As a top predator, dolphins are prone to accumulation of contaminants present within their food chains, particularly those that are persistent and those that tend to bioaccumulate and biomagnify. There are concerns about the potential for an increase in marine mammal entanglement in fishing nets and marine debris, the reduction or prey species and damage caused to seabed habitats by mobile fishing gear. For the Bottlenose dolphin the presence and persistence of artificial inert or toxic materials (eg. synthetic plastics and fibres, hydrocarbons) can cause entanglement, smothering or ill-health.

Site Name: Cardigan Bay **Location Grid Ref: SN214641** **JNCC Site Code: UK0012712** **Size (ha): 95,860.36** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Quality of sea cave habitat is of particular importance to grey seals which utilise caves as resting haul-out and breeding sites. Species populations in caves may be exposed to contaminants in groundwater seeps strongly influenced by agricultural or other management practices on overlying land surface. Discarded and misplaced artificial materials are present in many sea-caves. Lost and discarded fishing gear and persistent rubbish form a physical hazard to many species and some are a source of chemical contamination. Caves demonstrate a tendency to retain debris, particularly those caves with complex shapes and / or boulder/cobble floors. ▪ **Harbour-dredging** - There is potential for the disposal of spoil from these projects to affect seabed habitats and marine mammals.
Landowner/ Management Responsibility	N/A
HRA/AA Studies undertaken that address this site	BERR (2007) *AA of Blocks 106/30, 107/21 & 107/22 (Cardigan Bay)* 24th Offshore Oil and Gas Licensing Round. http://www.offshore-sea.org.uk/downloads/Cardigan_Bay_24th_Round_Blocks_Appropriate_Assessment.pdf ▪ The precautionary principle has been applied and consent has not been granted. The AA outcome currently prevents the awarding of oil and gas exploration licences. ▪ This decision, it is stated, could be reviewed in the light of further study into the range, distribution, movement and habits of the Cardigan Bay dolphin community. HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of

Site Name: Cardigan Bay Location Grid Ref: SN214641 JNCC Site Code: UK0012712 Size (ha): 95,860.36 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	adverse effects from urban and economic development and recreation and tourism as a result of the WSPU.

Site Name: **Carmarthen Bay and Estuaries** **Location Grid Ref: SS357991** **JNCC Site Code: UK0020020** **Size (ha): 66,101.16** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Carmarthen Bay is a wide, shallow bay west of the Gower Peninsula. It is approximately 28 km from east to west by 20 km north to south. Carmarthen Bay marine SAC embraces the whole of the bay. The Bay is, from an ecological perspective, a multiple interest site containing a range of very important EU-level habitat. Its estuaries – Taf, Tywi, Gwendraeth and Loughor (Burry Inlet) - together form a single functional unit and represent some 3.4% of the UK SAC estuary resource. The first three of the four abovementioned rivers drain into the Bay via a common mouth. Also of note are the Bay's extensive saltmarshes - the largest in South Wales (5,760 ha), as well as its intertidal mud and sandflats (approx. 7,000 ha) - 2.4% of the entire UK resource, accounting for around 10% of the SAC's area.
Qualifying Features	**Annex I habitats that are a primary reason for selection of this site:** ▪ Sandbanks which are slightly covered by sea water all the time; ▪ Estuaries; ▪ Mudflats and sandflats not covered by seawater at low tide; ▪ Large shallow inlets and bays; ▪ *Salicornia* and other annuals colonising mud and sand; ▪ Atlantic salt meadows *Glauco-Puccinellietalia maritimae* **Annex II species that are a primary reason for selection of this site:** ▪ Twaite shad *Alosa fallax* **Annex II species present as a qualifying feature, but not a primary reason for site selection:**

Site Name: **Carmarthen Bay and Estuaries** **Location Grid Ref: SS357991** **JNCC Site Code: UK0020020** **Size (ha): 66,101.16** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ Sea lamprey *Petromyzon marinus* ▪ River lamprey *Lampetra fluviatilis* ▪ Allis shad *Alosa alosa* ▪ Otter *Lutra lutra*
Conservation Objectives	**Objectives for the Estuaries:** ▪ Total extent of all estuarine communities within the site is at or above *ca.* 9,500 ha ▪ Variety and species composition of intertidal communities is at or above 1999/2000 values, and there is no change in their macro-scale distribution ▪ Hydroid rockpool community LR.H is present throughout its range within the site ▪ Extent, variety and species composition of any notable subtidal sediment and subtidal hard substrata communities are at or above established baselines (to be determined) ▪ Extent, variety and indigenous species composition of saltmarsh communities are at 1997/1998 values ▪ Extent, variety and indigenous species composition of transitional saltmarsh communities are at or above1997/98 values ▪ Number of juvenile bass *Dicentrarchus labrax* is at or above an established baseline (to be determined) ▪ Through-passage (and residency) of migratory fish to and from areas that comprise the species' known and potential distribution, is unhindered and undisturbed ▪ Spatial and temporal patterns of physical and chemical conditions and processes are within limits sufficient to satisfy all the preceding objectives above **Objectives for the Sand and Mudflats:** ▪ The total extent of all intertidal mudflats, sandflats and associated shallow channels within the site is at the 1999/2000 value (*ca.* 7,000 ha)

Site Name: Carmarthen Bay and Estuaries Location Grid Ref: SS357991 JNCC Site Code: UK0020020 Size (ha): 66,101.16 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The variety and species composition of intertidal mudflat and sandflat communities is at or above 1999/2000 values; and there is no change in their macro-scale distribution ▪ The extent of notable communities is at or above 1999/2000 values, and there is no change in their macro-scale distribution ▪ Notable species are present ▪ The spatial and temporal patterns of physical and chemical conditions and processes are within limits sufficient to satisfy the preceding objectives above. **Objectives for Atlantic Saltmarsh:** ▪ Extent of the Atlantic saltmeadows within the site is at the 1997/98 value (*ca.* 2,400 ha) ▪ Variety, extent and distribution of saltmarsh communities that form the Atlantic saltmeadows are at their 1997/98 values ▪ Areas of well-developed zoning of plant communities within the saltmarshes are at or above 1997/98 values ▪ Indigenous species composition of the saltmarsh communities is at or above 1997/98 values ▪ Structural diversity of the saltmarsh vegetation, which is governed by a wide range of grazing regimes, is at or above1997/98 levels ▪ Range and extent of the morphologies of tidal creeks, saltpans and stepped saltmarsh surfaces within the Atlantic saltmeadow habitat, are at 1997/98 values ▪ Populations of all notable species are viable ▪ Extent of the common cord-grass *Spartina anglica* is at or below the 1997/98 value ▪ Spatial and temporal patterns of physical and chemical conditions and processes are within limits sufficient to satisfy the preceding objectives above. **Objectives for *Salicornia* and Other Annuals:**

Site Name: Carmarthen Bay and Estuaries Location Grid Ref: SS357991 JNCC Site Code: UK0020020 Size (ha): 66,101.16 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Extent of pioneer saltmarsh communities within the site is at or above the 1997/98 value ▪ Variety, extent and distribution of the pioneer saltmarsh communities are at their 1997/98 values ▪ Indigenous species composition of the pioneer saltmarsh communities is at 1997/98 values ▪ Variety and extent of geomorphological components supporting the pioneer saltmarsh habitat, such as tidal creeks and saltpans, are at 1997/98 values ▪ Population of *Salicornia pusilla* is viable ▪ Extent of the common cord-grass *Spartina anglica* is at or below the 1997/98 value ▪ Spatial and temporal patterns of physical and chemical conditions and processes are within limits sufficient to satisfy the preceding objectives above. **Objectives for the Large Shallow Inlets/Bays:** ▪ The total extent of all shallow inlet/bay communities within the site is at or above *ca.* 43,500 ha ▪ The variety and species composition of littoral and sublittoral communities is at or above 1999/2000 values, and there is no change in their macro-scale distribution ▪ The notable littoral and infralittoral communities are present throughout their range within the site viable ▪ Species composition of notable littoral and infralittoral communities is at or above established baselines (to be determined) ▪ Notable species are present ▪ Through-passage (and residency) of migratory fish to and from areas that comprise the species' known and potential distribution, is unhindered and undisturbed ▪ Populations of juvenile and adult fish are at or above established baselines (to be determined) ▪ Spatial and temporal patterns of physical and chemical conditions and processes are within limits sufficient to satisfy the preceding objectives above.

Site Name: **Carmarthen Bay and Estuaries** **Location Grid Ref: SS357991** **JNCC Site Code: UK0020020** **Size (ha): 66,101.16** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Objectives for the Subtidal Sandbanks: ▪ The extent and volume of Helwick Bank, as expressed by rolling 5-year means, are at or above the 2001-2005 means ▪ The macro-topography of Helwick Bank, as expressed by rolling 5-year means, is at or above the 2001-2005 mean ▪ The total extent of mobile bedforms (sand dunes) on Helwick Bank, as expressed by rolling 5-year means, is at or above the 2001-2005 mean ▪ There is no long-term change in the sediment characteristics of Helwick Bank from 2001 values ▪ The extent of each of three biotopes is at 2001 values ▪ Species richness along the southern flank of Helwick Bank is at or above the 2001 level ▪ Notable species in or on the sandbank are present ▪ The number of sandeel *Ammodytes tobianus* is at or above an established baseline (to be determined) ▪ The diversity of fish species is at or above 2001 levels ▪ The number of elasmobranchs is at or above 2001 levels ▪ The spatial and temporal patterns of physical and chemical conditions and processes (see Box 6.5) are within limits sufficient to satisfy the preceding objectives above. **Objectives for the Shad:** ▪ The number of adult and juvenile shad *Alosa sp.* within the site is at or above established baseline values (to be determined) ▪ Sufficient suitable habitat for the shad is present, to support and accommodate the full size range of juvenile shad, throughout the species' known and potential distribution ▪ Sufficient suitable food resources are available for the shad, at levels meeting the requirements of the number of shad of all year classes present within the site

Site Name: Carmarthen Bay and Estuaries Location Grid Ref: SS357991 JNCC Site Code: UK0020020 Size (ha): 66,101.16 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Shad are allowed to migrate unhindered and undisturbed to and from any areas of the site they may require, including feeding and spawning grounds ▪ Estuarine water quality in the Three Rivers complex is in class A. **Objectives for the River Lamprey:** ▪ The number of adult and juvenile river lamprey within the site is at or above established baseline values (to be determined) ▪ Sufficient suitable food resources are available for the river lamprey, at levels meeting the requirements of the number of river lamprey within the site ▪ River lamprey are allowed to migrate unhindered and undisturbed to and from any areas of the site they may require, including feeding and spawning grounds ▪ Estuarine water quality in the Three Rivers complex is in class A. **Objectives for the Sea Lamprey:** ▪ The number of adult and juvenile sea lamprey within the site is at or above established baseline values (to be determined) ▪ Sufficient suitable food resources are available for the sea lamprey, at levels meeting the requirements of the number of sea lamprey within the site ▪ Sea lamprey are allowed to migrate unhindered and undisturbed to and from any areas of the site they may require, including feeding and spawning grounds ▪ Estuarine water quality in the Three Rivers complex is in class B or above. **Objectives for the Otter:** ▪ The number of otters within the site is at or above an established baseline (to be determined) ▪ The macro-scale distribution of otters within the site conforms with an established baseline (to be

Site Name: **Carmarthen Bay and Estuaries** **Location Grid Ref: SS357991** **JNCC Site Code: UK0020020** **Size (ha): 66,101.16** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	determined) ▪ The extent of supporting habitats is at 1997-2000 values, and their quality is either at or above the1997-2000 values ▪ Sufficient suitable breeding areas for otters are present within the site (to be determined) ▪ Sufficient suitable resting areas for otters are present within the site (to be determined) ▪ Sufficient suitable travelling routes for otters are present within and to / from the site, particularly between river systems (to be determined) ▪ Sufficient abundance and diversity of prey species are available (to be identified) ▪ There is good access to good quality freshwater within the site for drinking/bathing (to be determined)
Component SSSIs	Intertidal areas of Carmarthen Bay and Estuaries SAC * SSSI mapping for the Carmarthen Bay and Estuaries SAC is available on the Countryside Council for Wales (CCW) website at http://www.ccw.gov.uk/interactive-maps/protected-areas-map.aspx
Key Environmental Conditions (factors that maintain site integrity	**Estuaries** Spatial and temporal patterns of physical and chemical conditions and processes This covers a wide variety of hydrophysical and chemical conditions and / or processes that influence the estuaries, including the following: ▪ Wave exposure ▪ Tidal flows ▪ Topography ▪ Turbidity ▪ Water quality

Site Name: Carmarthen Bay and Estuaries Location Grid Ref: SS357991 JNCC Site Code: UK0020020 Size (ha): 66,101.16 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	More specifically: ▪ sediment movements within the estuaries and exchanges of sediment between the estuaries and Carmarthen Bay; ▪ the estuaries are allowed to reach their respective morphological equilibria between their physical forms and their respective hydrodynamic regimes (realignment of the estuaries); ▪ the current balance between annually averaged riverine, freshwater inputs and tidal flows; ▪ the levels of fine sediment input from the rivers remain within acceptable limits. **Mudflats and sandflats not covered by seawater at low tide** The spatial and temporal patterns of physical and chemical conditions and processes This covers a wide variety of sedimentary, hydrophysical and chemical conditions and / or processes that influence the mudflats and sandflats, including the following: ▪ Wave exposure ▪ Tidal flows ▪ Topography ▪ Turbidity ▪ Water quality **Atlantic saltmeadows (*Glauco-Puccinellietalia maritimae*)** The spatial and temporal patterns of physical and chemical conditions and processes This covers a wide range of sedimentary, hydrophysical and chemical conditions and/ or processes that

Site Name: Carmarthen Bay and Estuaries Location Grid Ref: SS357991 JNCC Site Code: UK0020020 Size (ha): 66,101.16 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	influence the Atlantic saltmeadows, including the following: ▪ Wave exposure ▪ Tidal flows ▪ Sediment transport ▪ Water quality **Salicornia and other annuals colonising mud and sand** The spatial and temporal patterns of physical and chemical conditions and processes This covers a wide range of sedimentary, hydrophysical and chemical conditions and/ or processes that influence Salicornia and other annuals, including the following: ▪ Wave exposure ▪ Tidal flows ▪ Sediment transport ▪ Water quality **Large shallow inlets / bays** The spatial and temporal patterns of physical and chemical conditions and processes This covers a wide variety of hydrophysical and chemical conditions and/ or processes that influence Carmarthen Bay, including the following: ▪ Wave exposure ▪ Tidal flows ▪ Topography ▪ Sediment transport

Site Name: **Carmarthen Bay and Estuaries** **Location Grid Ref: SS357991** **JNCC Site Code: UK0020020** **Size (ha): 66,101.16** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ Water quality **Subtidal sandbanks** The spatial and temporal patterns of physical and chemical conditions and processes This covers a wide variety of hydrophysical and chemical conditions and/ or processes that influence Helwick Bank, including the following: ▪ Wave exposure ▪ Tidal flows ▪ Sediment transport ▪ Water quality **Alosa sp. – shad** Presence of sufficient suitable habitat This refers to the following: ▪ Estuaries ▪ Large shallow inlets and bays ▪ Sandbanks which are slightly covered by sea water all the time
SAC Condition Assessment	Not available, although the CCW advice regarding the SAC's qualifying features cites generally **favourable** conditions for all elements.
Vulnerabilities (includes existing pressures and trends)	▪ Carmarthen Bay is both a fisheries resource and important nursery ground. Developments in fishing practices and target species could threaten the integrity of both the sea-bottom communities. Most

Site Name: Carmarthen Bay and Estuaries Location Grid Ref: SS357991 JNCC Site Code: UK0020020 Size (ha): 66,101.16 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	potential threats come from fisheries and related activities such as shellfish management and access issues related to mussel and cockle gathering. ▪ Salicornia is very susceptible to marine pollution from oil spills or refinery effluent and is killed quickly by a single spillage. Operations, which may cause deterioration or disturbance to the interest features of Carmarthen Bay and Estuaries EMS are contained in the Draft Interim Advice provided by CCW.
Landowner/ Management Responsibility	Multiple ownership, including conservation organisations
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from urban and economic development and infrastructure (water abstraction and pollution) as a result of the WSPU.

Site Name: Cleddau Rivers **Location Grid Ref: SM938249** **JNCC Site Code: UK0030074** **Size (ha): 750.73** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The River Cleddau is one of the westernmost rivers in Britain and can be broadly divided into the Eastern and Western arms. **The Eastern Cleddau River** Starting at an altitude of 225m, approximately 1.5km from Mynachlog-ddu and at the foot of the Preseli hills of north Pembrokeshire, the river flows for 26km (74km including tributaries) south to its tidal limit at Blackpool Bridge, where it discharges into the Milford Haven Waterway SAC. From its source the river flows south, across an ancient valley wetland. The boundary for the upper reach of the Eastern Cleddau River and Afon Wern abuts the Mynydd Preseli SSSI. The gradient of the river increases producing a turbulent flow during its journey south through narrow wooded valleys. In its lower reaches the river meanders through a wide valley floodplain bordered by low bluffs. The tributaries included within the Eastern Cleddau are the Afon Wern, Llanycefn, Rhyd-afallen, Afon Syfynwy, Rhyd-y-Brown Brook, Ty-llosg Brook, Deepford Brook, Cotland Brook, Afon Conin, Pont Shan and Narberth Brook. **The Western Cleddau River** The main channel stretches for 30km between its source at Mathry, which lies at an altitude of 112m, to the tidal limit of the Daugleddau Estuary at Haverfordwest, flowing over sands and gravels deposited as the ice sheets from the last glaciation retreated. In its upper course the river flows over soft substrates, across a marshy valley, bounded by the extensive mire of Corsydd Llangloffan NNR/SSSI. As it enters the wooded valley of Priskilly Forest the gradient of the river increases, and this relatively rapid section continues to Wolf's Castle and through the gorges at Treffgarne. In

Site Name: Cleddau Rivers **Location Grid Ref: SM938249** **JNCC Site Code: UK0030074** **Size (ha): 750.73** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	its lower reaches the river meanders through a wide valley floodplain bordered by low bluffs, to its tidal limit at Haverfordwest, where the Western Cleddau discharges into the Milford Haven Waterway SAC. The tributaries included within the Western Cleddau are the Afon Cleddau, Nant-y-bugail, Afon Anghof, Nant-y-coy Brook, Spittal Brook, Rudbaxton Water, Camrose Brook and Cartlett Brook. At the head of the Afon Cleddau is Esgyrn Bottom SSSI, the best example of a raised bog in the county as well as the most south-westerly example of this habitat in the UK
Qualifying Features	**Annex I habitats qualifying feature:** ▪ Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior (Alon-Padion, Alnion incanae, Salicion albae)**Priority feature ▪ Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation ▪ Active raised bogs *Priority feature **Annex II species primary reason for selection:** ▪ Brook lamprey *lampetra planeri* ▪ River lamprey *lampetra fluviatilis* ▪ Bullhead *cottus gobio* ▪ European otter *lutra lutra* **Annex II species qualifying feature:** ▪ Sea lamprey *petromyzon marinus*
Conservation Objectives	**The ecological status of the watercourse is a major determinant of FCS for all features. The required conservation objective for the watercourse is defined below.**

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Conservation Objective for the watercourse ▪ The capacity for the habitats in the SAC to support each feature at near-natural population levels, as determined by predominantly unmodified ecological and hydromorphological processes and characteristics, should be maintained as far as possible, or restored where necessary. ▪ The ecological status of the water environment should be sufficient to maintain a stable or increasing population of each feature. This will include elements of water quantity and quality, physical habitat and community composition and structure. It is anticipated that in most instances these limits will concur with the standards used by the Review of Consents process. ▪ Flow regime, water quality and physical habitat should be maintained in, or restored as far as possible to, a near-natural state, in order to support the coherence of ecosystem structure and function across the whole area of the SAC. ▪ All known breeding, spawning and nursery sites of species features should be maintained as suitable habitat as far as possible, except where natural processes cause them to change. ▪ Flows, water quality, substrate quality and quantity at fish spawning sites and nursery areas will not be depleted by abstraction, discharges, engineering or gravel extraction activities or other impacts to the extent that these sites are damaged or destroyed. ▪ The river planform and profile should be predominantly unmodified. Physical modifications having an adverse effect on the integrity of the SAC, including, but not limited to, revetments on active alluvial river banks using stone, concrete or waste materials, unsustainable extraction of gravel, addition or release of excessive quantities of fine sediment, will be avoided. ▪ River SSSI features should be in favourable condition. ▪ Artificial factors impacting on the capability of each species feature to occupy the full extent of its natural range should be modified where necessary to allow passage, eg. weirs, bridge sills, acoustic barriers. The reservoir dams on the Syfynwy are excluded.

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Natural factors such as waterfalls, which may limit the natural range of a species feature or dispersal between naturally isolated populations, should not be modified. ▪ Flows during the normal migration periods of sea and river lamprey will not be depleted by abstraction to the extent that passage upstream to spawning sites is hindered. ▪ Levels of nutrients, in particular phosphate, will be agreed between EA and CCW for each Water Framework Directive water body in the Cleddau SAC, and measures taken to maintain nutrients below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process. ▪ Levels of all other water quality parameters that could affect the distribution and abundance of all species will be agreed between EA and CCW for each Water Framework Directive water body in the Cleddau SAC, and measures taken to maintain pollution below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process. Potential sources of pollution not addressed in the Review of Consents, such as contaminated land, will be considered in assessing plans and projects. ▪ Potential sources of pollution not addressed in the review of consents, such as contaminated land, will be considered in assessing plans and projects. ▪ Levels of suspended solids will be agreed between EA and CCW for each Water Framework Directive water body in the Usk SAC. Measures including, but not limited to, the control of suspended sediment generated by agriculture, forestry and engineering works, will be taken to maintain suspended solids below these levels. **Objectives for:** **Sea lamprey** **Brook lamprey** **River lamprey** **Bullhead** ▪ The conservation objective for the watercourse (above) must be met

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The population of the feature in the SAC must be stable or increasing over the long termThe natural range of the feature in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future ▪ Passage of the feature through the SAC is not to be hindered by artificial barriers such as weirs ▪ The characteristic channel morphology provides the diversity of water depths, current velocities and substrate types necessary to fulfil the habitat requirements of the features **Objectives for European otter:** ▪ The population of otters in the SAC is stable or increasing over the long term and reflects the natural carrying capacity of the habitat within the SAC ▪ The SAC will have sufficient habitat, including riparian trees and vegetation and wetlands, to support the otter population in the long term ▪ The natural range of otters in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future ▪ The otter must be able to breed and recruit successfully in the SAC. The size of breeding territories may vary depending on prey abundance ▪ Otter food sources must be sufficient for maintenance of the population ▪ The safe movement and dispersal of individuals around the SAC is facilitated by the provision, where necessary, of suitable riparian habitat, and underpasses, ledges, fencing etc at road bridges and other artificial barriers ▪ No otter breeding site should be subject to a level of disturbance that could have an adverse effect on breeding success **Objectives for water courses with *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation:** ▪ The general objectives for the watercourse (above) must be met ▪ The natural range of the plant communities represented within this feature should be stable or increasing in the SAC

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The area covered by the feature within its natural range in the SAC should be stable or increasing ▪ The conservation status of the feature's typical species should be favourable condition **Objectives for Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*:** ▪ The canopy needs to be dominated by single stands of alder *Alnus glutinosa* or willow *Salix spp* ▪ The structure of alluvial woodland is recognised as being dynamic - its presence over mature trees is desirable but not essential ▪ The river itself should be dynamic to allow for areas of outwash and deposition that trees can regenerate on ▪ Lying or standing deadwood (> 20cm diameter and > 1m length) is present at all sites ▪ The feature should support alluvial ground flora including two of the following: o meadowsweet *Filipendula ulmaria* o yellow flag *Iris pseudacorus* o nettle *Urtica dioica* o common reed *Phragmities australilis* o greater tussock sedge *Carex paniculata* o opposite-leaved golden saxifrage *Chrysosplenium oppositifolium* o rushes *Juncus spp* o tufted hair-grass *Deschampsia cespitosa* o hemlock water-dropwort *Onanthe crocata* o wild angelica *Angelica sylvestris*. **Objectives for Active Raised Bog:** ▪ On the mire expanse there should be at least 3 of *Calluna vulgaris*, *Erica tetralix*, *Eriophorum angustifolium*, *E.vaginatum* & *Trichophorum cespitosum* constant, with a combined cover not exceeding 80% ▪ No single species > 50% cover

Site Name: Cleddau Rivers **Location Grid Ref: SM938249** **JNCC Site Code: UK0030074** **Size (ha): 750.73** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ At least one of *Andromeda polifolia, Drosera rotundifolia, Empetrum nigrum, Narthecium ossifragum* and *Vaccinium oxycoccos* occurring frequently ▪ On the mire expanse only that there are at least 2 of the following spp. constant, with a combined cover > 20%: *Sphagnum capillifolium, S. magellanicum, S. papillosum, S. tenellum* ▪ No reduction in extent of microtopographic features (e.g. bog pools).
Component SSSIs	▪ Western Cleddau River SSSI (Management units 1 - 7) ▪ Eastern Cleddau River SSSI (Management units 8 - 17) ▪ Corsydd Llangloffan SSSI (Management units 18, 19, 20 & 30) ▪ Esgyrn Bottom SSSI (Management units 21, 22, 23 & 29) ▪ Wallis Moor SSSI (Management units 24 - 27 & 31 - 33) ▪ Treffgarne Gorge and Tors SSSI (Management unit 28) The site has been divided into 28 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	The ecological structure and functions of the site are dependent on hydrological and geomorphological processes (often referred to as hydromorphological processes), the quality of riparian habitats and connectivity of habitats. The more mobile species, such as migratory fish and otters, may also be affected by factors operating outside the site. ▪ **Hydrological processes** in particular river flow and water chemistry, determine a range of habitat factors of importance to the SAC features, including current velocity, water depth, wetted area, substrate quality, dissolved oxygen levels and water temperature. Maintenance of both high 'spate' flows and base-flows is essential. Reductions in flow may reduce the ability of the adults of migratory fish to reach spawning sites. Water-crowfoot vegetation thrives in relatively stable, moderate flows and clean water. The flow regime

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	should be characteristic of the river in order to support the functioning of the river ecosystem. ▪ **Geomorphological processes** of erosion by water and subsequent deposition of eroded sediments downstream create the physical structure of the river habitats. Whilst some sections of the river are naturally stable, processes at the wider catchment scale generally govern processes of erosion and deposition occurring at the reach scale, although locally, factors such as the effect of grazing levels on riparian vegetation structure may contribute to enhanced erosion rates. In general, management that interferes with natural geomorphological processes, for example preventing bank erosion through the use of hard revetments or removing large amounts of gravel, are likely to be damaging to the coherence of the ecosystem structure and functions. ▪ **Riparian habitats** including bank sides and habitats on adjacent land, are an integral part of the river ecosystem. Diverse and high quality riparian habitats have a vital role in maintaining the SAC features in a favourable condition. The type and condition of riparian vegetation influences shade and water temperature, nutrient run-off from adjacent land, the availability of woody debris to the channel and inputs of leaf litter and invertebrates to support in-steam consumers. Light, temperature and nutrient levels influence in-stream plant production and habitat suitability for the SAC features. Woody debris is very important as it provides refuge areas from predators, traps sediment to create spawning and juvenile habitat and forms the base of an important aquatic food chain. Otters require sufficient undisturbed riparian habitat for breeding and resting sites. It is important that appropriate amounts of tree cover, tall vegetation and other semi-natural habitats are maintained on the riverbanks and in adjacent areas, and that they are properly managed to support the SAC features. This may be achieved, for example, through setting up stream-side corridors in appropriate locations, managing grazing levels, selective coppicing of riparian trees and restoring adjacent wetlands. ▪ **Habitat connectivity** is an important property of river ecosystem structure and function. Many of the fish that spawn in the river are migratory, depending on the maintenance of suitable conditions on their migration routes to allow the adults to reach available spawning habitat and juvenile fish to migrate

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	downstream. For resident species, dispersal to new areas, or the prevention of dispersal causing isolated populations to become genetically distinct, may be important factors. Artificial obstructions including weirs and bridge sills can reduce connectivity for some species. In addition, reaches subject to depleted flow levels, pollution, or disturbance due to noise, vibration or light, can all inhibit the movement of sensitive species. The dispersal of semi-terrestrial species, such as the otter, can be adversely affected by structures such as bridges under certain flow conditions, therefore these must be designed to allow safe passage. The continuity of riparian habitats enables a wide range of terrestrial species to migrate and disperse through the landscape. Connectivity should be maintained, or restored where necessary, as a means to ensure access for the features to sufficient habitat within the SAC. ▪ **External factors** operating outside the SAC, may also be influential, particularly for the migratory fish and otters. Otters may be affected by developments that affect resting and breeding sites outside the SAC boundary.
SAC Condition Assessment	**Conservation status of Feature 1: Sea lamprey *Petromyzon marinus*** Status: **Unfavourable: Unclassified**. Monitoring in 2004 found no sea lamprey ammocoetes in either optimal or sub-optimal habitat. There are no records of adult migrating sea lamprey held on file. For this reason the status of sea lamprey must be considered unfavourable. Whilst barriers to migration are considered, it is unlikely that these are the only reason for the lack of sea lamprey found. **Conservation status of Features 2 & 3: Brook lamprey *Lampetra planeri* & River lamprey *Lampetra fluviatilis*** Status: **Unfavourable: Unclassified**. There is a lack of evidence to gauge river lamprey numbers with few records of adult held on file.

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Conservation status of Feature 4: Bullhead Cottus gobio Status: **Unfavourable: unclassified** The current unfavourable status results from a lack of appropriate survey data. **Conservation status of Feature 5: European otter *Lutra lutra*** Status: **Favourable: Maintained**. The conservation status of otters in the Afonydd Cleddau SAC is based on records of otter distribution, general riparian habitat quality, breeding records and current breeding habitat quality as outlined in the Performance Indicators. **Conservation status of Feature 6: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation** Status: **Unfavourable: unclassified** Important stands of the habitat have been identified in the lower reaches of the Western Cleddau main river below Welsh Hook, at Wolf's Castle and at Pont Llangwarren. According to CCW further understanding is required in relation to the distribution and status of this feature and its natural range within the Afonydd Cleddau SAC. **Conservation status of Feature 7: Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*)**

Site Name: Cleddau Rivers **Location Grid Ref: SM938249** **JNCC Site Code: UK0030074** **Size (ha): 750.73** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Status: **Unfavourable: Unclassified** **Conservation status of Feature 8: Active raised bogs** Status: **Unfavourable: declining** Raised mires are dependent upon a high and seasonally stable water table, together with an acidic water chemistry and low levels of plant nutrient availability, for both their development and maintenance. The chief factor affecting the raised bog vegetation is its hydrology. The construction of sluices on outflow ditches has been postulated as a means of countering the effects of peat cutting and drainage.
Vulnerabilities (includes existing pressures and trends)	▪ **Abstraction levels** - entrainment in water abstractions directly impacts on species population dynamics through reduced recruitment and survival rates. The impact of flow depletion downstream of a number of abstractions was assessed in the Review of Consents process. Abstractions that may have an impact on the features of the SAC have passed to stage 4 for options appraisal. The outcome of these assessments is awaited. ▪ **Hydromorphology** - The impact of lowered temperatures from the hypolimnial release at Llys y Fran on the Cleddau has the potential to impact upon lamprey. The lamprey is temperature dependent at critical freshwater life stages. Distribution of lamprey within the Cleddau catchment is therefore likely to be limited by the current river temperature regime. Under conditions of prolonged low flows and high nutrient status, epiphytic algae may suppress the growth of aquatic flowering plants. The Active raised bog is dependent on the maintenance of a natural drainage pattern. No new drainage systems should be put in place, and no pools should be created. ▪ **Diffuse Pollution and siltation** - In the Afonydd Cleddau catchment, the most significant sources of diffuse pollution and siltation are from agriculture, including fertiliser run-off, livestock manure, silage effluent and soil erosion from ploughed land. The most intensively used areas such as heavily trampled gateways and

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	tracks can be especially significant sources of polluting run-off. Preventative measures can include surfacing of tracks and gateways, moving feeding areas, and separating clean and dirty water in farmyards. There are a number of smaller sewage treatment works within the SAC, which can have a detrimental effect if not operating to a high standard. Activities that could affect water draining on to the bog should be carried out carefully. Where possible, use of fertilisers or other chemical inputs on fields adjoining the bog should be limited. This will ensure a clean supply of water draining on to the bog margins. Any felling in the woodland should avoid causing silt problems. Aerial pollution has a damaging impact on sensitive bog plants, and originates from both local sources and further afield. ▪ **Barriers to migration** - Artificial obstructions including weirs and bridge sills can reduce connectivity for some species. In addition, reaches subject to depleted flow levels, pollution, or disturbance due to noise, vibration or light, can all inhibit the movement of sensitive species. The dispersal of semi-terrestrial species, such as the otter, can be adversely affected by structures such as bridges under certain flow conditions, therefore these must be designed to allow safe passage. ▪ **Development pressure** - can cause temporary physical, acoustic, chemical and sediment barrier effects that need to be addressed in the assessment of specific plans and projects. Noise/vibration eg. due to impact piling, drilling, salmon fish counters present within or in close proximity to the river can create a barrier to shad migration. Barriers resulting from vibration, chemicals, low dissolved oxygen and artificially high sediment levels must be prevented at key times. ▪ **Invasive and non-native species** - All fish are vulnerable to the introduction of non-indigenous species. Some sites have non native species present, namely Rhododendron, Himalayan Balsam and Japanese Knotweed, and control of these will be required. ▪ **Artificially enhanced densities of other fish** - may introduce unacceptable competition or predation pressure and the aim should be to minimise these risks in considering any proposals for stocking.

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Grazing** - Excessive grazing can have a negative affect on natural regeneration and the ground flora of the Alluvial forests, where livestock have access, fencing may be needed to control or preferably exclude livestock. ▪ **Alder root disease** - can have a devastating impact on alluvial forests. Coppicing the affected trees has been shown to prolong their life and this course of action will be taken when alder root disease is found in survey sites or on ad hoc site visits. ▪ **Burning on Active raised bog** - burning is sometimes used as a traditional method of rejuvenating areas of purple moor-grass, however, the bog here should not be burnt. The layer of Sphagnum moss and underlying peat would be damaged, and the growth of purple moor-grass encouraged. Accidental summer burns are particularly damaging. ▪ **External factors** - operating outside the SAC, may also be influential, particularly for the migratory fish and otters. For example, otters may be affected by developments that affect resting and breeding sites outside the SAC boundary. Otter road deaths could have a potentially significant impact on otter populations within the Afonydd Cleddau catchment.
Landowner/ Management Responsibility	Multiple ownership
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects

Site Name: Cleddau Rivers Location Grid Ref: SM938249 JNCC Site Code: UK0030074 Size (ha): 750.73 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from urban and economic development as a result of the WSPU.

Site Name: **Gweunydd Blaencleddau** **Location Grid Ref: SN155317** **JNCC Site Code: UK0030144** **Size (ha): 150.11** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Gweunydd Blaencleddau is a large wetland complex in a shallow south-west trending valley that lies around the headwaters of the eastern Cleddau River. The site contains important populations of the Marsh Fritillary butterfly and Southern Damselfly. Much of the SAC is grazed common land.
Qualifying Features	**Annex I habitats qualifying feature:** ▪ Northern Atlantic wet heaths with *Erica tetralix* ▪ *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) ▪ Blanket bogs * Priority feature ▪ Transition mires and quaking bogs; ▪ Alkaline fens **Annex II species primary reason for selection:** ▪ Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia* **Annex II species qualifying feature:** ▪ Southern damselfly *Coenagrion mercuriale*
Conservation Objectives	**Conservation Objective for Feature 1:** ***Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)** Vision for *Molinia* meadows The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

Site Name: Gweunydd Blaencleddau Location Grid Ref: SN155317 JNCC Site Code: UK0030144 Size (ha): 150.11 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Molinia meadows will occur as small patches around the site. ▪ The following plants will be common: purple moor-grass Molinia caerulea; small sedges including Carex pulicaris and hostiana, and devil's bit scabious Succisa pratensis. ▪ Soft rush Juncus effusus and species indicative of agricultural modification, such as perennial rye grass Lolium perenne and white clover Trifolium repens will be virtually absent. ▪ Scrub species such as willow Salix and birch Betula will also be largely absent. ▪ All factors affecting the achievement of these conditions will be under control. Performance indicators for *Molinia* meadows The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Gweunydd Blaencleddau SAC Management Plan. **Conservation Objective for Feature 2: North Atlantic Wet Heath with *Erica tetralix*** Vision for wet heath The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Wet heath will occupy at least 6% of the total site area. ▪ The following plants will be common in the wet heath: heather Calluna vulgaris; cross-leaved heath Erica tetralix; purple moor-grass Molinia caerulea; bog asphodel Narthecium ossifragum; short sedges Carex species; mosses including bog moss Sphagnum species; devil's bit scabious Succisa pratensis. ▪ Competitive species indicative of under-grazing, particularly purple moor-grass Molinia caerulea and

Site Name: Gweunydd Blaencleddau Location Grid Ref: SN155317 JNCC Site Code: UK0030144 Size (ha): 150.11 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	western gorse Ulex gallii will be kept in check. ▪ Bracken, and scrub species such as willow Salix and birch Betula will also be largely absent from the wet heath. Performance indicators for wet heath (see performance indicators for *Molinia* meadows) **Conservation Objective for Feature 3: Blanket Bog** Vision for blanket bog The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Blanket bog will occupy at least 4% of the total site area. ▪ The following plants will be common in the blanket bog: hare's-tail cotton grass Eriophorum vaginatum; heather Calluna vulgaris; cross-leaved heath Erica tetralix and bog moss Sphagnum species. ▪ Competitive species indicative of under-grazing, particularly purple moor-grass Molinia caerulea will be kept in check. ▪ Bracken, and scrub species such as willow Salix and birch Betula will also be largely absent from the blanket bog. Performance indicators for blanket bog (see performance indicators for *Molinia* meadows) **Conservation Objective for Feature 4: Transition Mire and Quaking Bog** Vision for transition mire and quaking bog

Site Name: **Gweunydd Blaencleddau** **Location Grid Ref: SN155317** **JNCC Site Code: UK0030144** **Size (ha): 150.11** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Transition mire and quaking bog will occupy at least 2% of the total site area. ▪ Bottle sedge should be abundant over carpets of bog mosses, 'brown' mosses or swamp species such as marsh cinquefoil ▪ Competitive species indicative of under-grazing, particularly soft rush Juncus effusus and purple moor-grass Molinia caerulea will be kept in check. ▪ Scrub species such as willow Salix and birch Betula will also be largely absent. Performance indicators for transition mire and quaking bog (see performance indicators for *Molinia* meadows) **Conservation Objective for Features 5 and 9: Flushes including Alkaline Fen** Vision for Flushes The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Flushes will occupy at least 10% of the total site area. ▪ The majority of the flushes will naturally support carpets of bog moss below a canopy of tall rushes or sedges. ▪ A proportion (at least 15%) should support short, open vegetation rich in small mosses, sedges and wildflowers characteristic of less acidic conditions. This type of flush corresponds to the Alkaline fen feature of European interest.

Site Name: Gweunydd Blaencleddau Location Grid Ref: SN155317 JNCC Site Code: UK0030144 Size (ha): 150.11 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Many of the flushes will have short, open vegetation to suit the requirements of the southern damselfly. ▪ Competitive species indicative of under-grazing, particularly soft rush Juncus effusus and purple moor-grass Molinia caerulea will be kept in check. ▪ Scrub species such as willow Salix and birch Betula will also be largely absent. Performance Indicators for Flushes (see performance indicators for *Molinia* meadows) **Conservation Objective for Feature 6: Marsh fritillary** Vision for Marsh fritillary The vision for the marsh fritillary is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Density of larval webs during sampling will be at least 200 per hectare of optimal breeding habitat ▪ There will be at least 2ha of optimal breeding habitat on the site ▪ There will be at least a further 8ha of optimal breeding habitat within a 2km radius of the SSSI, and 50 ha of suitable marshy grassland ▪ Optimal breeding habitat comprises grassland, with Molinia abundant, where the vegetation height is within the range of 10 to 20 cm, and where, for at least 80% of sampling points, Succisa pratensis is present within a 1 m radius. Scrub (>1 metre tall) covers no more than 10% of area. ▪ Suitable marshy grassland comprises grassland where Succisa pratensis is present at lower frequencies but still widely distributed throughout the habitat patch and in which scrub (>1 metre tall) covers no more than 20% of area. Alternatively, Succisa may be present at high density in close-cropped swards. ▪ The factors influencing the breeding habitat are under control

Site Name: **Gweunydd Blaencleddau** **Location Grid Ref: SN155317** **JNCC Site Code: UK0030144** **Size (ha): 150.11** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Conservation Objective for Feature 7: Southern damselfly Vision for southern damselfly The vision for the southern damselfly is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Density of adult males during sampling is at least 1 male per 10 square metres of breeding habitat ▪ The extent of breeding habitat is at least 1500 square metres. ▪ Breeding habitat will be mapped where patches of oviposition plants are present as more than 20% cover over areas greater than 0.5 square metres and no more than 20% of the total cover is greater than 15cm tall. Southern damselfly females lay their eggs into the tissue of emergent aquatic plants and in Wales the key species are Menyanthes trifoliata (bog-bean), Hypericum elodes (marsh St. John's wort), Potamogeton polygonifolius (bog pondweed) and Apium nodiflorum (fool's watercress). ▪ The factors influencing the flush habitat are under control
Component SSSIs	▪ Gweunydd Blaencleddau SSSI The site has been divided into 16 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Grazing** - a suitable grazing regime is important ▪ **Drainage** - Near natural drainage patterns should be maintained or re-instated in the blanket bog, alkaline fen and transition mire and quaking bog.

Site Name: **Gweunydd Blaencleddau** **Location Grid Ref: SN155317** **JNCC Site Code: UK0030144** **Size (ha): 150.11** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
SAC Condition Assessment	**Conservation Status of Feature 1: *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)** 2005: **Unfavourable Declining** This habitat is poorly represented on the site, occurring as scattered small patches across several management units. **Conservation Status of Feature 2: Wet Heath** 2005: **Unfavourable declining** Monitoring results concluded that most stands were still in unfavourable condition, primarily due to a paucity of Sphagna. Grazing has subsequently ceased, and the habitat is declining once again. **Conservation Status of Feature 3: Blanket Bog** 2005: **Unfavourable recovering** Monitoring work here demonstrated that excess *Molinia* growth was a key factor leading to unfavourable condition on the former area, whilst low cover of sphagna and presence of negative indicators *Juncus effusus* and *Polytrichum commune* were problems on the latter. **Conservation Status of Feature 4: Transition Mire and Quaking Bog** 2005: **Favourable maintained**

Site Name: **Gweunydd Blaencleddau** **Location Grid Ref: SN155317** **JNCC Site Code: UK0030144** **Size (ha): 150.11** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	This habitat is scattered across several management units. No formal monitoring has been completed. Most areas are still relatively well characterised and open. **Conservation Status of Feature 5: Alkaline Fen** 2005: **Favourable maintained** No formal monitoring has been undertaken, but surveillance indicates that most key areas are in good condition. **Conservation Status of Feature 6: Marsh Fritillary** 2005: **Unfavourable** The monitoring results suggest a larval web density in the region of 5-10 per hectare of suitable habitat, a long way short of the 200 per hectare required by the conservation objective. **Conservation Status of Feature 7: Southern Damselfly** 2005: **Favourable** Partial surveillance of this feature has been ongoing since 2000, and locations and numbers have seemed relatively stable.
Vulnerabilities (includes existing pressures and trends)	▪ **Inappropriate grazing -** The enclosures are extensively grazed under a variety of different regimes, principally involving horses and cattle. *Euphydras aurinia* requires a moderately tussocky *Molinia*-

Site Name: **Gweunydd Blaencleddau** **Location Grid Ref: SN155317** **JNCC Site Code: UK0030144** **Size (ha): 150.11** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	dominated sward with abundant *Succisa pratensis*. Grazing pressures could be increased across much of the site to produce or maintain the requisite sward structure for this species. ▪ **Burning** - should continue to be avoided. ▪ **Abstractions** - for private water supply could reduce the quantity of water available to vegetation here with a groundwater influence. ▪ **Water Quality** - there is potential for the site to be affected by pesticides, for example following sheep-dip application, or airborne pollutants such as nitrous oxides from vehicle exhausts.
Landowner/ Management Responsibility	Common land and multiple ownership, which includes conservation organisations.
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concluded that the WSPU and other plans are unlikely to give rise to significant adverse effects at this site.

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The Limestone Coast of South West Wales SAC comprises a series of SSSI's stretching from Castlemartin at the western end of southern Pembrokeshire, to the Bishopston Valley on the south east coast of Gower. The sites boast a great variety of habitats and species in relatively small area. The imposing limestone cliffs support an unusually high number of nationally rare and scarce plants within the maritime, dune and neutral/calcareous grassland, which exists on the cliffs themselves and the hinterland. This area has been highlighted as a key locality for rare and scarce higher plants. Some of the coast is still actively used by the MOD for military training (Castlemartin and Giltar Point). The continued presence of these ranges has restrained intensification of land use in the buffer zone and allowed the primary nature conservation features to persist. Greater horseshoe bats are known to feed regularly over the grassland. The coastal caves support one of the most important greater horseshoe bat winter roosts (hibernacula) in the UK. Over 100 bats regularly occur in one cave alone (see Pembrokeshire Bat Sites and Bosherston lakes management plan for further details on Bats features). The partially submerged sea caves are cross-boundary features between the Limestone Coast SAC and the Pembrokeshire Marine SAC.
Qualifying Features	**Annex I habitats primary reason for selection:** ▪ Vegetated sea cliffs of the Atlantic and Baltic coasts; ▪ Fixed dunes with herbaceous vegetation ('grey dunes') *Priority feature **Annex I habitats qualifying feature:** ▪ European dry heaths; ▪ Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*)

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ Caves not open to the public; ▪ Submerged or partially submerged sea caves **Annex II species primary reason for selection:** ▪ Greater horseshoe bat *Rhinolophus ferrumequinum* ▪ Early gentian *Gentianella anglica* **Annex II species qualifying feature:** ▪ Petalwort *Petalophyllum ralfsii*
Conservation Objectives	**Conservation Objective for Feature 1: Vegetated sea cliffs of the Atlantic and Baltic coasts** Vision for Vegetated sea cliffs of the Atlantic and Baltic coasts The vegetated sea cliffs feature comprises a number of component habitats as described below. All of these must be in favourable conservation for the feature as a whole to be considered to be in favourable conservation status. The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: Cliff and crevice vegetation continues to form a very open cover of deep-rooted crevice dwelling species forming a narrow band along the steep cliff edges. On their seaward edges the cliff and crevice communities grade into the supralittoral lichen zone. Landwards they meet the maritime grassland and thereophyte communities which themselves intermingle with the maritime heaths. Both golden samphire and rock sea lavenders are typically associated with crevices and ledges and continue to be generally widespread where

Site Name: Limestone Coast of SW Wales Location Grid Ref: SR885969 JNCC Site Code: UK0014787 Size (ha): 1,594.53 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	open and exposed conditions prevail. The maritime grasslands range from short open swards with occasional areas of bare ground to taller, more closed swards where Red Fescue (*Festuca rubra*) forms tussocks and "mattresses". The more strongly maritime influenced grassland communities on this site, for the most part, occur on the exposed south and south westerly facing slopes. Elsewhere, in less exposed situations the grasslands show less maritime influence with species such as Cowslips (*Primula veris*) and Bluebells (*Hyacinthoides non-scripta*) occurring. The grasslands also support important populations of typical invertebrates such as ants and butterflies as well as insects associated with open soils, grass roots or dung such as various cranefly and beetle larvae. Maritime heath occurs in exposed locations as stands of low, wind-pruned heath dominated by heather (*Calluna vulgaris*) and bell heather (*Erica cinerea*). Species such as spring squill (*Scilla verna*), milkworts (*Polygala spp.*) pale dog violet (*Viola lactea*) and sedges (*Carex spp.*) are present in stands. This gives way to gorse-dominated dry heath (feature 3) in more sheltered areas. ▪ Cliff and crevice vegetation occurs naturally on suitably exposed rocky ledges and crevices throughout the site. The variety of vegetation types reflecting the degree of exposure to maritime influences - including communities with thrift, rock and golden samphires, sea lavenders, sea-beet and sea plantain. ▪ Maritime Grassland occupies approximately 15% of the total site area. ▪ The following plants are common in the maritime grassland: thrift *Armeria maritima*; spring squill *Scilla verna* and sea plantain *Plantago maritime*. ▪ Maritime Heathland occupies approximately 10% of the total site area. ▪ The following plants are common in the maritime heathland: heather *Calluna vulgaris*; bell heather *Erica*

Site Name: Limestone Coast of SW Wales Location Grid Ref: SR885969 JNCC Site Code: UK0014787 Size (ha): 1,594.53 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	cinerea and spring squill *Scilla verna*. ▪ Populations of nationally rare and nationally scarce vascular and lower plant species, associated with cliff-crevice, maritime grassland and related calcareous grassland swards are maintained. ▪ Competitive species indicative of under-grazing, particularly cocksfoot *Dactylis glomerata*, tor grass *Brachypodium pinnatum*, bracken *Pteridium aquilinum* and western gorse *Ulex gallii* are kept in check. ▪ Non-native plants such as Hottentot fig Carpobotus edulis are absent or rare. Performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Limestone Coast of South West Wales SAC Management Plan. **Conservation Objective for Feature 2: Fixed dunes with herbaceous vegetation ("grey dunes")** Vision for fixed dunes The dune complex at Broomhill Burrows, Broadhaven South and Barafundle Bay will demonstrate a fairly complete sequence from fore dunes fringed on the seaward edge by narrow bands of mobile dune, through to fixed dune grassland. There will be small blow-out patches of bare sand and fore-dune and strandline. Elsewhere in the SAC, the perched dunes (such as at Stackpole Warren) may not show this zonation from fore dune to fixed dune but should none-the-less have some blowouts and areas of bare sand. ▪ Fixed dunes occupy approximately 20% of the total site area. ▪ The following plants will be common in a short, open sward: *Asperula cyanchica,Carlina vulgaris, Euphrasia*

Site Name: Limestone Coast of SW Wales Location Grid Ref: SR885969 JNCC Site Code: UK0014787 Size (ha): 1,594.53 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	spp., Gentianella amarella, Linum catharticum, Lotus corniculatus, Pilosella officinarum, Plantago coronopus, Sedum acre, Thymus polytrichus, Viola spp., Anacamptis pyramidalis. ▪ Distinct patches of open, lichen-rich turf, supporting *Fulgensia fulgens* on Trichosporum moss will occur in several mapped locations in management units 2a, 2b, 3b and 3c. ▪ Alien species will be absent, and other negative indicator species (such as bracken *Pteridium aquilinum*) will be under control in fixed dune grassland. ▪ Sea Buckthorn *Hippophae rhamnoides* will be absent from all dunes systems within the SAC. Note: This feature is not present within the Gower sections of the SAC Performance Indicators for Fixed dunes with herbaceous vegetation (see performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts above) **Conservation Objective for Feature 3: European Dry Heath** Vision for Dry Heath The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The current extent of Dry heath will be maintained. ▪ Dry heath will occupy areas of the site where heathland extends beyond the zone of maritime influence. ▪ As a result dry heath may lack the species characteristic of maritime heath. ▪ Much of the dry heath will have a short and open structure. ▪ The dry heaths will support typical species such as the dark green fritillary (*Argynnis aglaja*) and the silver studded blue butterfly, *Plebeius argus*.

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Performance Indicators for European Dry Heath (see performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts above) **Conservation Objective for Feature 4: Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*)/ Dry grasslands and scrublands on chalk or limestone** Vision for Semi-natural dry grasslands and scrubland This feature ▪ The Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) / Dry grasslands and scrublands on chalk or limestone will be referable to the NVC communities Festuca – Avenula grassland (CG2) and Festuca – Hieracium – Thymus grasslands (CG7) ▪ The communities making up this feature will cover at least 14 ha within Castlemartin Cliffs and ▪ Dunes SSSI) and 10 ha within Stackpole and Stackpole Quay to Trewent Point SSSI, and 18 ha within the Gower Coast SSSI (which also includes NVC community CG1) occurring as small patches along coastal cliff-tops, among the fixed dune grasslands, mainly on shallow soils overlying areas of limestone bedrock. ▪ The feature will support a range of typical plant and invertebrate species. Performance Indicators for Semi-natural dry grasslands and scrubland facies on calcareous substrates (see performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts above) **Conservation Objective for Feature 5: Caves not open to the public** Vision for caves not open to the public

Site Name: Limestone Coast of SW Wales Location Grid Ref: SR885969 JNCC Site Code: UK0014787 Size (ha): 1,594.53 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	These caves continue to be primarily of importance as bat hibernacula and roost sites. Their performance indicators are expressed in terms of their suitability as bat hibernacula/roost sites. The performance indicators are those given in Wilkinson, K. (2006). Monitoring report: Greater horseshoe bats of the Limestone Coast of South West Wales SAC. CCW Internal document. Choughs continue to breed high in the roofs of several caves. ▪ There is minimal disturbance to the caves by the public ▪ The caves remain suitable as bat roost/hibernation sites ▪ Caves utilised by breeding choughs remain undisturbed for choughs (see Feature 11) ▪ The geological interest of the caves will be unconcealed ▪ Natural processes such as small rock falls will be tolerated Performance Indicators for Caves not open to the public (see performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts above) **Conservation Objective for Feature 6: Submerged or partially submerged sea caves** Vision for Submerged or partially submerged sea caves These features are cross-boundary features between the Limestone Coast SAC and the Pembrokeshire Marine SAC. Other than prevention of human disturbance to both the caves themselves and any species which may be using them (mainly bats and grey seals), there is little management required or indeed possible for this feature. ▪ There should be minimal disturbance to the caves and they should remain closed to the public.

Site Name: Limestone Coast of SW Wales Location Grid Ref: SR885969 JNCC Site Code: UK0014787 Size (ha): 1,594.53 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The caves should remain suitable as bat roost/hibernation sites ▪ The caves used by grey seal should remain free of human disturbance ▪ The geological interest of the caves will be unconcealed ▪ Natural processes such as small rock falls will be tolerated ▪ The affects of tidal activity in partially submerged caves should have a minimal effect on the internal environment of the cave (where the cave is a bat roost). Performance Indicators for submerged or partially submerged sea caves (see performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts above) **Conservation Objective for Feature 7: Greater horseshoe bat *Rhinolophus ferrumequinum*** Vision for Greater horseshoe bat *Rhinolophus ferrumequinum* ▪ Greater horseshoe bats will continue to utilise known caves roosts undisturbed by the public. ▪ Distinctive droppings indicate presence at any time of year but largest numbers of bats are likely to be found in the period November to March. ▪ The peak winter population in the main Castlemartin Cave is equivalent to approximately 20% of the Pembrokeshire Bat Sites and Bosherston lakes SAC greater horseshoe bat population. ▪ The greater horseshoe bat population within the caves being monitored is stable or increasing. ▪ Natural processes such as rock falls will be tolerated but other factors affecting the achievement of these conditions are under control. Performance Indicators for greater horseshoe bat (see performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts above)

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Conservation Objective for Feature 8: Petalwort *Petalophyllum ralfsii* Vision for Petalwort *Petalophyllum ralfsii* *Petalophyllum ralfsii* will continue to be found at two SSSI sand dune systems within the SAC, (Broomhill Burrows & Brownslade Burrows). The Brownslade Burrows population will occur patchily at high densities in successionally young, open vegetation in damp, dune slacks. ▪ *P. ralfsii* has a continued presence at Broomhill Burrows SSSI. ▪ *P. ralfsii* occurs at high densities in suitable dune slacks at Brownslade Burrows SSSI. ▪ At both sites there are areas of open, damp, calcareous dune slacks with patches of suitable and optimal habitat present. ▪ Suitable dune slacks have patches of bare ground that is being colonised by jelly lichens (Collema spp.) and Barbula mosses. ▪ Brownslade Burrows continues to be winter grazed by cattle and sheep, which is helping to maintain the short sward and open conditions required by *P. ralfsii*. Note: This feature is not present within Gower sections of the SAC Performance Indicators for Petalwort (see performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts above) **Conservation Objective for Feature 9: Early gentian (*Gentianella anglica*)** Vision for Early gentian (*Gentianella anglica*)

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ The feature will be present at Stackpole in management unit 3d. ▪ Dune gentians with three or fewer internodes and a long terminal internode, which contributes between 40-100% of the height of the stem (corresponding to the current definition/description of Early gentian *Gentianella anglica*) occur within at least 4 open dry dune slacks on Stackpole Warren and in other open, herb-rich calcareous grassland areas. ▪ Further survey/research will confirm that these forms are definitely separable from *Gentianella amarella* Note: This feature is not present within Gower sections of the SAC Performance Indicators for Early gentian (see performance indicators for Vegetated sea cliffs of the Atlantic and Baltic coasts above)
Component SSSIs	▪ Broomhill Burrows SSSI (Management units 1a - 1c) ▪ Castlemartin Cliffs and Dunes SSSI (Management units 2a - 2g) ▪ Stackpole SSSI (Management units 3a - 3f) ▪ Stackpole Quay to Trewent Point SSSI (Management unit 4) ▪ Freshwater East to Skrinkle Haven SSSI ▪ Lydstep Head - Tenby Burrows SSSI (Management units 5a, b, d and e) ▪ Gower coast - Rhossili to Porth Eynon SSSI (Management units 6 - 20) ▪ Pwll Du Head and Bishopston Valley SSSI (Management units) ▪ Oxwich Bay SSSI (Management units 6 - 20) The site has been divided into 29 management units. A map of the management units can be viewed on the CCW website.

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Key Environmental Conditions (factors that maintain site integrity	▪ **Management Requirements of Vegetated sea cliffs of the Atlantic and Baltic coasts** o Maritime Cliff and Crevice Vegetation - Generally no management required, maintained by natural processes including exposure and erosion. o Maritime Grassland - Grazing regimes should be maintained and fine-tuned across all key managed sections. The relatively light grazing required by maritime grassland may not always be compatible with the heavier grazing required to recover maritime heathland to favourable condition. It is vital for rabbit grazing to continue. o Maritime Heathland - Grazing (ideally by ponies) and cutting are key tools for management of the heathland. Ensuring adequate and controlled livestock grazing with ponies and/or cattle is key to maintenance management. o A controlled grazing regime will provide the best means of maintaining the grassland and heath communities. ▪ **Management Requirements of Fixed dunes with herbaceous vegetation ("grey dunes")** o Ensuring adequate and controlled livestock grazing with sheep, ponies and cattle is key to maintenance management of the dune grasslands. Grazing regimes should be maintained and fine-tuned across all key managed sections. Rabbit and livestock grazing should be maintained. o Some surface scarification or small-scale sand-extraction may maintain open conditions required for some associated features. However, large-scale removal of sand from what is generally a fossilised dune system, with insufficient new sand coming in to replenish that which was being lost will, potentially, significantly damage the system. ▪ **Management Requirements of Dry Heath**

Site Name: Limestone Coast of SW Wales Location Grid Ref: SR885969 JNCC Site Code: UK0014787 Size (ha): 1,594.53 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	o Management should aim to maintain the current extent of heathland, with no fragmentation of heath communities within the site as a whole. A controlled grazing regime should provide the best means of maintaining the heath community complex. o Burning is a traditional management technique for heath though where deliberate burning is not carried out correctly, or where there is accidental burning, the effects can be damaging and increase susceptibility to bracken and gorse invasion. ▪ **Management Requirements of Semi-natural dry grasslands and scrubland** o There are no specific management requirements for this feature beyond those set out for the fixed dune grasslands. It is vital for rabbit and livestock grazing to continue. Grazing regimes should be maintained and fine-tuned across all key managed sections. Ensuring adequate and controlled livestock grazing with sheep, ponies and cattle is key to maintenance management. ▪ **Management Requirements of caves not open to the public** o The coastal caves within this SAC are some of the most important greater horseshoe bat hibernacula in the UK. Until recently, it was generally assumed that bats use these caves during the winter as hibernation sites, although now CCW recognise that these caves are also likely to be important at other times of the year, as transitionary/ feeding/ satellite roosts. These caves are also important lesser horseshoe bat roosts. o These caves require no active "habitat" management but visitor and recreational activities need to be managed and controlled to ensure the targets set in the conservation objectives are met. ▪ **Management Requirements of submerged or partially submerged sea caves** o Requirements are largely to keep the sea caves free of direct or indirect human disturbance, either in

Site Name: Limestone Coast of SW Wales Location Grid Ref: SR885969 JNCC Site Code: UK0014787 Size (ha): 1,594.53 Designation: SAC	Habitats Regulations Assessment: Data Proforma

the form of entrance to the caves, activities which may cause the caves to become unstable or close the entrances, pollution, litter or disturbance to the species (especially bats and grey seals) which may be using the caves. Other than this natural events such as rockfall may have an impact but there is in most cases likely to be little that could be done, or would be desirable to be done, to rectify and natural disturbance.

- **Management Requirements of Greater horseshoe bat**

  - Greater horseshoe bats are known to feed widely over the Castlematin peninsula and elsewhere along the limestone coast - utilising any number of available coastal caves as temporary overnight shelters in between feeding periods or as longer term roosts - notably in the winter months.
  - Grazing, especially by cattle, provides important insect populations for the bats. Wooded areas are also important for a similar range of insects including beetles and moths. Continued provision and maintenance of good structured habitats will be essential to support coastal flight lines to areas with associated abundant sources of insect prey.
  - Identified sea cave roosts, used by horseshoe bats must be maintained free of disturbance, especially in winter when the bats may be roosting for quite long periods. Unnatural awakening could cause them to burn up valuable fat reserves at times when insect food is short, and this could affect their survival.

- **Management Requirements of Petalwort *Petalophyllum ralfsii***

  - Occasional disturbance and excavation of parts of the dune slacks, backed up by adequate and controlled livestock grazing with sheep, ponies and cattle will be key to maintenance management. Grazing regimes should be maintained and fine-tuned across all key managed sections.
  - Through careful selective management of the former quarrying areas, where there is a suitable water table, dune slack communities could be allowed to double in area. The wet and dry valley floors, and communities they support, should be allowed to develop naturally, as free as possible from damage

Site Name: Limestone Coast of SW Wales Location Grid Ref: SR885969 JNCC Site Code: UK0014787 Size (ha): 1,594.53 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	and pollution, including potential build up of extraneous materials related to military activities. ▪ **Management Requirements of Early gentian *Gentianella anglica*** o Grazing is essential to maintain an open short grassland sward, favoured by low-growing *Gentianella* species, and to prevent the most competitive coarser plants (like heath or scrub) from taking over. A rabbit population, present at Stackpole for several hundred years, makes a very important contribution to the overall grazing levels in the dune hollows supporting *Gentianella* plants. They also graze down and keep in check young and seedling gorse plants and other potentially invasive scrub of open grassland.
SAC Condition Assessment	**Conservation Status of Feature 1: Vegetated sea cliffs of the Atlantic and Baltic coasts** In 2004 the Vegetated sea cliffs of the Atlantic and Baltic coasts was considered to be **Unfavourable Declining** conservation status due to scrub invasion. **Conservation Status of Feature 2: Fixed dunes with herbaceous vegetation ("grey dunes")** In 1999 the sand dune habitats were considered to be in **Favourable** conservation status. **Conservation Status of Feature 3: Dry Heath** In 2006 the Dry (calcareous) heath was considered to be in **Unfavourable Declining** conservation status due to excessive burning and scrub invasion. **Conservation Status of Feature 4: Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*)/ Dry grasslands and scrublands on chalk or limestone**

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	In 2006 this feature was determined to be in **Unfavourable Declining** conservation status due to damage from agricultural operations and over-grazing. **Conservation Status of Feature 5: caves not open to the public** The feature is considered to be in **Favourable** conservation status (As determined in March 2006 but based on data predominantly gathered between January and March 2003). **Conservation Status of Feature 6: submerged or partially submerged sea caves** This feature was assessed in 2006 as being in **Favourable** conservation status though the difficulty of monitoring this feature meant that there is little actual evidence to base this assessment on. On the grounds that the main factor to affect the sea caves would be human in origin and no human disturbance was seen, they were assumed to be favourable. **Conservation Status of Feature 7: Greater horseshoe bat *Rhinolophus ferrumequinum*** The Greater horseshoe bat of the Limestone Coast of South West Wales SAC is considered to be in **Favourable** condition on the Pembrokeshire section of the SAC. (December 2007). **Conservation Status of Feature 8: Petalwort *Petalophyllum ralfsii*** The *Petalophyllum ralfsii* of the Limestone Coast of South West Wales SAC is considered to be in **Favourable** condition on the Pembrokeshire section of the SAC. (October 2004). **Conservation Status of Feature 9: Early gentian *Gentianella anglica*** **Favourable**

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	The *Gentianella anglica* of the Limestone Coast of South West Wales SAC is considered to be in **Unfavourable Declining** conservation status on the Pembrokeshire section of the SAC. (October 2004).
Vulnerabilities (includes existing pressures and trends)	▪ **Access and Recreation** - Increased pressure for wider ranging outdoor activity -e.g. from cliff-climbing, the cliffs of South Gower are extremely popular with rock climbers as there a number of routes suitable for different abilities. This can impact on the cliff and ledge communities where climbers remove vegetation ('gardening') so as to gain a better hand or foot hold or to install equipment. Outdoor group-oriented parties, use of 4wd vehicles etc could pose potential threats the dunes, by trampling/ erosion and possibly burning. Excessive trampling and camping/ camp fires could be damaging to the grasslands and scrubland leading to erosion of open vegetation communities and localised nutrient enrichment. Identified sea cave roosts, used by horseshoe bats must be maintained free of disturbance, especially in winter when the bats may be roosting for quite long periods. The caves are currently accessible to climbers, cavers and water users. Unnatural awakening could cause them to burn up valuable fat reserves at times when insect food is short, and this could affect their survival. However, current level of disturbance in most caves on the Castlemartin peninsula, and between Lydstep and Penally, is thought likely to be low. However, as the number of people participating in outdoor activities such as rock climbing, coasteering and caving increases, it is possible that the amount of disturbance to the bats could increase. ▪ **Pollutants** - Airborne pollutants such as nitrous oxides from vehicle exhausts could affect the site. There is potential for certain features to be impacted by agricultural activities such as fertiliser application on adjoining land. Oil spills and nutrient enrichment could pose potential threats to components of the Vegetated sea cliffs of the Atlantic and Baltic coasts. Fertilisers can be very harmful to herb-rich natural coastal grasslands. This is because they stimulate the growth of grass species at the expense of the many different and this purpose they should not be used on the site. Stock-feeding (and associated salt licks and water troughs) can also lead to nutrient enrichment. If used these should only be undertaken at agreed

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	locations, well away from identified areas supporting scarce species such as *Gentianella* species. ▪ **Grazing** - Potential threats from: decline in rabbit numbers; spread of invasive species (e.g. tor grass), which may be unpalatable to grazing stock and could detrimentally affect community diversity. Current rabbit numbers have also been affected by disease (including Viral haemorrhagic disease). ▪ **Burning** - Drier parts of the dunes are potentially vulnerable to accidental burns - e.g. from military ordnance, although such fires would normally be expected to be limited to semi-fixed dune and fore-dune (e.g. drier marram-dominated areas). Dune fires could lead to serious erosion of the dune vegetation impacting fixed and semi-fixed dune habitats. Accidental burning is particularly a problem on the Gower Coast SSSI. The majority of features are venerable to accidental or uncontrolled burning. ▪ **Military Activity** - Excessive erosion by military activities, there is the potential for localised excessive erosion caused by intensive military use, or deposition of extraneous materials on the fixed dunes and dry heath. ▪ **Invasive/ Alien Species** - The introduction or spread of highly invasive or alien plants could pose a threat to maritime cliff and crevice communities and the fixed dunes. Scrub and bracken is a potential threat to the edges of the *Gentianella* sites.
Landowner/ Management Responsibility	Multiple ownership including conservation organisations.
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give

Site Name: **Limestone Coast of SW Wales** **Location Grid Ref: SR885969** **JNCC Site Code: UK0014787** **Size (ha): 1,594.53** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from recreation and tourism as a result of the WSPU.

Site Name: North Pembrokeshire Woodlands **Location Grid Ref: SN046345** **JNCC Site Code: UK0030227** **Size (ha): 315.68** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	North Pembrokeshire Woodlands is an example of old sessile oak wood in the south-west of the habitat's range in Wales, and at the extreme west of its UK range at this latitude. The SAC nestles beneath the northern slopes of the Mynydd Preseli hills, close to the north Pembrokeshire coast. The site is a complex of diverse woodland units, which range from strongly acidic upland oakwood to areas transitional to lowland oakwood; important fragments of floodplain woodland occur in the valley bottoms. The SAC's alluvial woodland is also important, and it is the only known breeding site for barbastelle bats in West Wales. The woodland is found on flood plains that are relatively nutrient-rich and subject to periodic flooding.
Qualifying Features	**Annex I habitats primary reason for selection:** ▪ Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles **Annex I habitats qualifying featurection:** ▪ Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) *Priority feature **Annex II species primary reason for selection:** ▪ Barbastelle bat *Barbastella barbastellus*
Conservation Objectives	**Conservation Objective for Feature 1: Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles** Vision for Feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

Site Name: North Pembrokeshire Woodlands **Location Grid Ref: SN046345** **JNCC Site Code: UK0030227** **Size (ha): 315.68** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ The majority of the SAC will be covered by oak woodland. ▪ There will be no measurable, permanent loss of semi-natural woodland. ▪ The trees will be locally native, with a dominance of oak in the canopy, and include ash and rowan. ▪ No more than 5% of the canopy forming trees will consist of non-native species. ▪ Each woodland will include trees of a wide range of age classes, including veteran trees. ▪ Between 10-25% of the woodland area will comprise a dynamic, shifting pattern of gaps: in the long-term, most of these will be created by natural processes. ▪ There will be sufficient natural regeneration to replace the canopy in these gaps over time. ▪ There will be abundant dead and dying trees with holes and hollows, rot columns, torn off limbs and rotten branches. Dead wood, both standing and fallen, will be retained to provide habitats for other species, and will represent at least 10% (by volume) of the total timber. ▪ Veteran trees will be favoured during any silvicultural management because they support a wide variety of species, including lichens. ▪ Old forest lichen species will be found throughout the site, especially on well-lit trees around woodland edges and glades. ▪ Invasive alien species, such as rhododendron, laurel and Japanese knotweed, will eventually be eradicated from the site, or restricted to very low cover. ▪ There will be a well-developed shrub layer throughout the SAC, including hazel and holly. ▪ The field layer will be diverse and include broad-buckler fern, greater wood-rush, bluebell, honeysuckle, wood-sorrel, dog's-mercury, opposite-leaved golden-saxifrage, bilberry, bracken, bramble and violets. ▪ The woodlands will support populations of butterflies, birds and mammals. ▪ All factors affecting the achievement of the foregoing conditions will be under control.

Site Name: North Pembrokeshire Woodlands Location Grid Ref: SN046345 JNCC Site Code: UK0030227 Size (ha): 315.68 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the North Pembrokeshire Woodlanda SPA Management Plan. **Conservation Objective for Feature 2: Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-padion, Alnion incanae, Salicion alvae*)** Vision for Feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ At least 2% of the SAC will be covered by alluvial woodland. ▪ The canopy will consist of locally native trees, with an overall dominance of alder. At least 90% of the canopy trees will be wet woodland species. There will be no non-native trees present in the canopy. ▪ In the long-term, each woodland will include trees of a broad range of age classes, including saplings and veteran trees. ▪ At any given time, around 30% of the woodland area will consist of a dynamic, shifting pattern of canopy gaps, maintained by natural processes. ▪ There will be sufficient natural regeneration in the gaps (from seed or vegetative) to replace the canopy, 90% of which will be alder or willow. ▪ There will be abundant dead and dying trees with holes and hollows, rot columns, torn off limbs and rotten branches. Dead wood, both standing and fallen, will be retained to provide habitats for other species, and

Site Name: North Pembrokeshire Woodlands Location Grid Ref: SN046345 JNCC Site Code: UK0030227 Size (ha): 315.68 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	will represent at least 10% (by volume) of the total timber. ▪ There will be no evidence of alder disease. ▪ Veteran trees will be favoured during any silvicultural management because they support a wide variety of species, including lichens. Old forest lichen species will be found throughout the sites, especially on well-lit trees around woodland edges and glades. ▪ Invasive alien species, such as rhododendron, laurel and Japanese knotweed, will be eradicated from the site, or subject to a control programme of eradication. ▪ The field layer will be diverse and dominated by alluvial species. Indicators of drying out (bramble) and over-grazing (creeping buttercup) will be scarce. ▪ All factors affecting the achievement of the foregoing conditions will be under control. Performance indicators for Feature 2 (see performance indicators for feature 1) **Conservation Objective for Feature 3: Barbastelle bat (*Barbastella barbastellus*)** Vision for Feature 3 The vision for this feature is for it to be in favourable conservation status, where all of the following conditions are satisfied: (N.B. The barbastelle is only a feature of Pengelli Forest and Pant-teg Wood SSSI, so the following conditions only apply to that part of the SAC.) ▪ There will be no loss of ancient semi-natural woodland at the site. ▪ Canopy gaps will be present throughout the site, with two or more young trees growing in each. ▪ Canopy cover will be 50-90% throughout the site (except in Hawthorn fields).

Site Name: North Pembrokeshire Woodlands **Location Grid Ref: SN046345** **JNCC Site Code: UK0030227** **Size (ha): 315.68** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ A well-developed shrub layer with holly will be present throughout the woodland, to provide a favourable micro-climate for roosting barbastelles. ▪ A minimum of 4 trees per hectare will be allowed to die standing, will not be removed or cut down. These will be distributed across the site and will include trees with splits, fallen, leaning trees and hollow trees. ▪ Ivy will be allowed to grow on trees throughout the site, to provide roosting opportunities. ▪ There will be no overall loss of open water. ▪ There will be no increase in disturbance (eg paths or rides) near any of the roosting sites. ▪ No roosting sites will be lost as a result of human intervention. ▪ Barbastelle bat passes will be detected on at least 4 out of 6 transects between 25 July and 7 September. ▪ There will be contiguous suitable foraging habitat within a 16km radius around Pengelli Forest, including wooded stream valleys, low and overgrown hedgerows, scrub, overgrown pastures, bracken stands and woodland (which can include conifer plantations). ▪ Roosts outside the SSSI boundary will be left undisturbed, with no woodland management within 50m of a barbastelle roost, and no clearance of the shrub layer. Over-mature trees in any of the woodlands within 2km of Pengelli should be left undisturbed except where they pose a risk to public safety, in which case minimal trees surgery can be permitted. ▪ All factors affecting the achievement of the foregoing conditions will be under control. Performance Indicators for the maintenance of suitable roosts and feeding areas at Pengelli Forest and Pant-teg Wood SSSI are provided in the North Pembrokeshire Woodlanda SPA Management Plan.
Component SSSIs	**SSSI name/ Unit No.** Garn Wood, Kilkiffeth Wood and Dan-deri- Cwm Felin-ban/ 10 Units Allt Pontfaen - Coed Gelli-fawr/ 9 Units Cwm Bach Sychpant/ 1 Unit

Site Name: North Pembrokeshire Woodlands **Location Grid Ref: SN046345** **JNCC Site Code: UK0030227** **Size (ha): 315.68** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Dyffryn Gwaun/ 5 Units Gallt Llanerch - Coed Gelli-deg/ 6 Units Pengelli Forest and Pant-teg Wood/ 1 Unit Coed Ty-canol/ 4 Units The site has been divided into 35 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Grazing** - levels are too high in some areas but too low in others. Light grazing to maintain canopy gaps and control bramble would be desirable throughout much of the SAC. This will also benefit the lichen and butterfly features of the SSSIs. These are woodland species, even though they depend on more open areas, and can be considered an integral part of the oak woodland SAC feature. Where grazing levels are too high for trees to regenerate, areas should be fenced off, or saplings protected with tree guards, or grazing pressure reduced for a period. Existing open areas within the SAC (old fields, meadows and wood pasture) should be kept open by grazing. ▪ **Woodland Structure** - The areas of woodland where barbastelles roost generally have a good age structure with many over-mature, ivy-clad trees, enough younger trees to ensure a future supply of roosting sites, and a well-developed shrub layer with abundant holly. These areas should be disturbed as little as possible. Within 2km of Pengelli Forest and Pant-teg Wood SSSI, the following management should be applied: o There should be no management within 50m of a roost. o All mature trees should be left as potential roosts o Natural regeneration should be protected with tree guards if necessary o There should be no shrub clearance except small-scale hazel coppicing for dormice. ▪ **Foraging Areas** - Areas of scrub, wet woodland, bracken, marshy grassland and hedgerows are all important for foraging bats. The land within a 16 km radius of Pengelli should have contiguous areas of

Site Name: North Pembrokeshire Woodlands Location Grid Ref: SN046345 JNCC Site Code: UK0030227 Size (ha): 315.68 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	semi-natural habitat, including all of those mentioned above, with sheltered flyways connecting areas of woodland.
SAC Condition Assessment	**Conservation Status of Feature 1: Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles** The current status of the feature overall is **unfavourable**. This is primarily due to historical factors: the woodlands are relatively even-aged, with a fairly closed canopy, as a result of felling during the two world wars. This in turn affects the diversity of the shrub and field layers, the abundance of shrubs and the amount of natural regeneration. Many of the management units are already recovering in these respects, but it could be decades before the performance indicators are satisfied. **Conservation Status of Feature 2: Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*** Most of the alluvial woodland is in Dyffryn Gwaun SSSI, which is receiving appropriate grazing management. The site is in **favourable** condition but faces two main threats: drying out and invasive species. **Conservation Status of Feature 3: Barbastelle Bat (*Barbastella barbastellus*)** The current status of the feature, based on the SSSI at Pengelli, is **favourable**. However, CCW currently has no influence over the management of the surrounding land where breeding roosts and foraging areas are found. If these areas were to fall into unsympathetic management, this could pose a threat to the barbastelle population as a whole and, therefore, the feature of the SAC and SSSI.
Vulnerabilities (includes existing pressures and trends)	▪ **Non-native species & Invasive species** - In the past non-native trees, notably sycamore and beech, have been planted. In some areas these are the oldest trees, so it would not be desirable to selectively remove them. Japanese knotweed and rhododendron should be eradicated by appropriate herbicide application. Japanese knotweed is present in places along the Afon Gwaun and occasionally spreads as

Site Name: North Pembrokeshire Woodlands Location Grid Ref: SN046345 JNCC Site Code: UK0030227 Size (ha): 315.68 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	pieces of the plant get washed along the river. ▪ **Pollution** - Nutrient enrichment and fertiliser drift from adjacent farmland could be affecting lichens and woodland communities in parts of the site. Appropriate management of arable and pasture land can address the problem. Buffer strips should be left alongside the woodland edge, or fields reverted to semi-improved pasture in these areas. ▪ **External Factors** - One threat to the barbastelle feature is that around half of the roosting sites and the majority of the foraging areas lie outside the SSSI and SAC boundaries, as the boundaries were drawn up before the bats were discovered. These areas are not currently protected by any management agreements. There is at present a very real risk of inappropriate land management damaging roosts and foraging areas outside the SSSI. ▪ **Drying out** - There is some localised poaching or over-grazing of the alluvial forests, but this is accepted as being the inevitable result of achieving the right level of grazing across a site that is very wet and awkward to manage. The main threat is of drying out in places, not from natural processes but from introduced drainage, where drains have been dug in the past allowing species of drier habitats (notably bramble and ash) to take over. There is a risk of drier woodland communities taking over from the alluvial woodland in these areas. However, raising water levels could make grazing the site even more difficult, and could have an impact on the black bog ant on adjacent land, so this should only be undertaken (if at all) after a thorough feasibility study.
Landowner/ Management Responsibility	Multiple ownership including conservation organisations.
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en

Site Name: North Pembrokeshire Woodlands **Location Grid Ref: SN046345** **JNCC Site Code: UK0030227** **Size (ha): 315.68** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ The HRA Screening concludes that the WSPU and other plans are unlikely to give rise to significant adverse effects at this site.

Site Name: North West Pembrokeshire Commons **Location Grid Ref: SM776273** **JNCC Site Code: UK0030229** **Size (ha): 248.89** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The North-West Pembrokeshire Commons SAC is situated on the St David's Pensinsula, north-east of the settlement of the same name. The site is comprised of five SSSIs which all fall entirely within the SAC boundary.
Qualifying Features	**Annex I habitats primary reason for selection:** ▪ European dry heaths ▪ Transition mires and quaking bogs **Annex I habitats qualifying feature:** ▪ Northern Atlantic wet heaths with *Erica tetralix* ▪ *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) **Annex II species primary reason for selection:** ▪ Floating water-plantain *Luronium natans*
Conservation Objectives	**Conservation Objective for Feature 1: Floating Water Plantain *Luronium natans*** Vision for Floating Water Plantain The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ There will be at least two populations, in separate waterbodies. ▪ There will be no contraction in the extent of *L. natans* populations. ▪ *L. natans* populations will be viable & able to maintain themselves on a long-term basis. *L. natans* must be

Site Name: North West Pembrokeshire Commons Location Grid Ref: SM776273 JNCC Site Code: UK0030229 Size (ha): 248.89 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	able to complete sexual and/or vegetative reproduction successfully. ▪ The waterbodies will have sufficient suitable habitat to support viable *L. natans* populations and to allow for future expansion of the population. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Floating Water Plantain The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the North West Pembrokeshire Commons SPA Management Plan. **Conservation Objective for Feature 2: European Dry Heaths** Vision for Dry Heath The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Dry heath will cover between 1% and 30% of the site area and display a range of plant and insect species typical of the habitat. ▪ The following plants will be common in the dry heath: heather *Calluna vulgaris*; bell heather *Erica cinerea* and western gorse *Ulex gallii*. ▪ Competitive species indicative of under-grazing, particularly bracken *Pteridium aquilinum* and purple moor-grass *Molinia caerulea* will be kept in check. Western gorse *Ulex gallii* will not exceed 50% cover. ▪ 70% of dry heath will be "good condition" dry heath. ▪ All factors affecting the achievement of these conditions, including grazing and scrub/bracken

Site Name: North West Pembrokeshire Commons Location Grid Ref: SM776273 JNCC Site Code: UK0030229 Size (ha): 248.89 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	encroachment are under control. Performance indicators for Dry Heath (see performance indicators for the Floating Water Plantain) **Conservation Objective for Feature 3: Transition Mires and Quaking Bogs** Vision for Transition Mire and Quaking Bog The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ TM&QB will cover at least 9ha of the site and display a range of plant and invertebrate species typical of the habitat. ▪ *Potentilla palustris, Carex diandra, Carex rostrata, Menyanthes trifoliata, Hypericum elodes, Pedicularis palustris* will be common, forming a quaking raft of vegetation. ▪ Juncus effusus will be at less than 5% cover. ▪ 70% of TM&QB will be good condition, where open water species will be present; large sedges, negative indicator species and scrub will be absent; grasses form <5% cover. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Transition Mire and Quaking Bog (see performance indicators for the Floating Water Plantain) **Conservation Objective for Feature 4: Northern Atlantic Wet Heaths with *Erica tetralix*** Vision for Wet Heath

Site Name: North West Pembrokeshire Commons Location Grid Ref: SM776273 JNCC Site Code: UK0030229 Size (ha): 248.89 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Wet heath will cover at least 14.5 ha of the site and display a range of plant and invertebrate species typical of the habitat. ▪ The following plants will be common in the dry heath: heather Calluna vulgaris; Cross-leaved heath Erica tetralix as well as bog moss Sphagnum spp. and Narthecium ossifragum. ▪ Competitive species indicative of under-grazing, particularly bracken Pteridium aquilinum, purple moor-grass Molinia caerulea and western gorse Ulex gallii will be kept in check. ▪ 70% of wet heath will be "good condition" wet heath. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Wet Heath (see performance indicators for the Floating Water Plantain) **Conservation Objective for Feature 5: *Molinia* Meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)** Vision for Molinia Meadows The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Molinia meadows habitat will cover at least 22 ha of the site and display a range of plant and invertebrate species typical of the habitat. ▪ 70% of the Molinia meadows habitat in each area of habitat will be described as being in good condition.

Site Name: North West Pembrokeshire Commons **Location Grid Ref: SM776273** **JNCC Site Code: UK0030229** **Size (ha): 248.89** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ The SAC marshy grassland will be dominated by Molinia caerulea, typically with a species-rich mixture of short sedges, forbs and bryophytes. One or more of Carex pulicaris, Carex hostiana or Cirsium dissectum must be at least frequent. ▪ Competitive species indicative of under-grazing, particularly Molinia itself, will be kept in check. ▪ Scrub species such as willow Salix and birch Betula will also be largely absent from the marshy grassland. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for *Molinia* Meadows (see performance indicators for the Floating Water Plantain)
Component SSSIs	Trefeiddan Moor SSSI (Management units 1 - 3) St David's Airfield Heaths SSSI (Management unit 4) Waun Fawr, Tyddewi SSSI (Management unit 5) Dowrog Common SSSI (Management units 6 - 9) Tretio Common SSSI (Management units 10 - 14) The site has been divided into 14 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Livestock grazing** - Light grazing by animals is essential for maintaining the site. Without an appropriate grazing regime, the dry heath would become rank and eventually turn to gorse scrub and woodland. ▪ **Water Quantity** - Peripheral surface drainage and/or abstractions for private water supply could reduce the quantity and quality of water available to this feature. ▪ **Water Quality** - Water may be subject to run-off from agricultural activities such as fertiliser application. It could also be affected by pesticides or airborne pollutants such as nitrous oxides from vehicle exhausts.

Site Name: North West Pembrokeshire Commons **Location Grid Ref: SM776273** **JNCC Site Code: UK0030229** **Size (ha): 248.89** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
SAC Condition Assessment	**Conservation Status of Floating Water Plantain *Luronium natans*** The conservation status of *Luronium natans* in the North-west Pembrokeshire Commons SAC is **Unfavourable** as the population is still present at only one site - Dowrog Pool - despite the restoration of other areas of suitable habitat. **Conservation Status of European Dry Heath** The status of dry heath on the North-west Pembrokeshire Commons SAC is **Unfavourable Recovering** (August 2005). The feature failed predominantly due to a lack of associated species (positive indicators) and the high cover of *Molinia*. **Conservation Status of Transition Mires and Quaking Bogs** The status of Transition Mires and Quaking Bogs on the North-west Pembrokeshire Commons SAC is **Unfavourable Recovering** (June 2006). Monitoring of the main areas on Dowrog and Trefeiddan found that they were lacking the required complement of open-water species, indicating that successional processes were occurring unchecked. **Conservation Status of Wet Heath** The status of the wet heath on the North West Pembrokeshire Commons is **Unfavourable Recovering** (August 2005). The feature failed predominantly due to a lack of associated species (positive indicators) and the high cover of *Molinia*. **Conservation Status of *Molinia* Meadows**

Site Name: North West Pembrokeshire Commons **Location Grid Ref: SM776273** **JNCC Site Code: UK0030229** **Size (ha): 248.89** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	The status of the *Molinia* Meadows on the North West Pembrokeshire Commons is **Unfavourable Recovering** (surveillance, 2005 – 2007). Primary reason for failure is excess growth of *Molinia*, due to recent history of under-grazing on component sites.
Vulnerabilities (includes existing pressures and trends)	▪ **Water Quality** - Water may be subject to run-off from agricultural activities such as fertiliser application. It could also be affected by pesticides or airborne pollutants such as nitrous oxides from vehicle exhausts. Dowrog Pool is fed by water arising on the common, but could potentially be impacted by agricultural activities such as fertiliser application on adjoining land. ▪ **Water Quantity** - Peripheral surface drainage and/or abstractions for private water supply could reduce the quantity and quality of water available to this feature. Modifying the hydrology of the area could have negative impacts as could successional changes to the vegetation in and around the pools, leading to a loss of suitable habitat ▪ **Burning** - Areas of dry heath have been burnt on an annual basis. These are usually carried out by the commoners to encourage fresh growth for stock, but occasionally may be accidental burns or arson attacks. Burning the same area too frequently may impoverish the heath, encouraging a vigorous re-growth of more competitive, fire-resistant species like purple moor-grass, western gorse and bracken. ▪ **Pollutants** - The dry heath could be affected by airborne pollutants such as nitrous oxides from vehicle exhausts, or drift of lime from adjacent fields ▪ **Alien species** - No invasive or alien species are currently recorded near the Luronium populations, but they could in future threaten the population.

Site Name: North West Pembrokeshire Commons **Location Grid Ref: SM776273** **JNCC Site Code: UK0030229** **Size (ha): 248.89** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Landowner/ Management Responsibility	Mostly common land.
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans are unlikely to give rise to significant adverse effects at this site.

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes **Location Grid Ref: SR976954** **JNCC Site Code: UK0014793** **Size (ha): 122.59** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The Bat Sites and Bosherston Lakes SAC, close to the southernmost mainland point of Pembrokeshire, is underpinned by a series of eight Sites of Special Scientific Interest (SSSI). The site supports approximately 9.5% of the UK greater horseshoe bat population. It represents the species at the north-western extremity of its range. Bosherston Lakes (also known as Bosherston Lily Pools), within Stackpole SSSI, are an outstanding shallow marl lake system created at intervals in the late 18th and mid 19th Century by damming and drowning three valleys in the Carboniferous Limestone. Three small streams, flowing in deeply incised valleys, feed the lake system. A separate valley south of the lakes, known as the Mere Pool valley, runs westward from Broadhaven. It contains semi-natural and man-made ground-water-fed pools and swamp, plus a wealth of other habitats in a small area - including dunes, coastal cliff, woodland and calcareous scrub plus associated communities and species. Much of the lake shoreline is wooded.
Qualifying Features	**Annex I habitats primary reason for selection:** ▪ Hard oligo-mesotrophic waters with benthic vegetation of *Chara* **Annex II species primary reason for selection:** ▪ Greater horseshoe bat *Rhinolophus ferrumequinum* **Annex II species qualifying feature:** ▪ Lesser horseshoe bat *Rhinolophus hipposideros* ▪ Otter *Lutra lutra*
Conservation Objectives	**Conservation Objective for Feature 1: Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp.*/**

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Calcium-rich nutrient- poor lakes, lochs and pools. Vision for feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Submerged Chara beds (mainly Chara hispida in places up to a metre long) will form the predominant submerged macrophyte vegetation throughout most of Central and Western Arms and Central Lake of Bosherston Lakes (unit 1a) and may be present in the Eastern Arm (unit 1b). ▪ Chara will occur at more than 50% frequency along regular surveillance transects within the Western and Central arms. ▪ Chara species (not necessarily hispida) will be present in other embayments and pools, including the Eastern Arm of Bosherston Lakes (unit 1b) and pools in the Mere Pool Valley (unit 1d). ▪ The Western and Central Arms are spring-fed, so nutrient levels here remain low. One of the main nutrients (phosphorous) will reach no more than 25 micrograms per litre in regular sampling areas. Nitrogen levels in the water will be low (less than 1 milligram per litre) and declining or stable. ▪ The Western Arm, Central Arm and Central Lake water will be fairly clear, but well vegetated with submerged and marginal plants. In natural openings (e.g. over springs) within otherwise dense Chara beds, a sechii disk will be viewable on the lakebed. ▪ Water depth will vary from about 3.5 metres OD (winter maximum) to about 0.5 metres or less in places in summer. ▪ Fringing the Chara beds, are beds of white water lilies Nymphaea alba. They will remain fairly abundant in the Western and Central Arms, with smaller populations in Central Lake. ▪ Reed and swamp and fringing burr-reed will be restricted to shallow zones – covering not more than 10 % of the site.

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Pembrokeshire Bat Sites and Bosherton Lakes SAC Management Plan. **Conservation Objective for Feature 2: Greater horseshoe bat *Rhinolophus ferrumequinum*** Vision for feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The greater horseshoe bat population will be capable of maintaining itself on a long-term basis as a viable component of its natural habitats. ▪ The natural range of greater horseshoe bats will neither be reduced nor will be likely to be reduced for the foreseeable future, and ▪ There will be sufficient habitat to maintain its populations on a long-term basis. ▪ At least three SSSI maternity roosts will be occupied annually by adult greater horseshoe bats and their babies: ▪ Stackpole Courtyard Flats and Walled Garden SSSI ▪ Slebech Stable Yard Loft, Cellars and Tunnels SSSI ▪ Felin Llwyngwair SSSI

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Carew Castle SSSI will continue to be used as an intermediate greater horseshoe bat roost, during the spring and autumn, as a male summer roost and an autumn/spring mating roost. ▪ The greater horseshoe bat population at the component SSSI's will be stable or increasing. ▪ There will be a sufficiently large area of suitable habitat surrounding these roosts to support the bat population, including continuous networks of sheltered, broadleaved woodland, tree lines and hedgerows connecting the various types of roosts with areas of insect-rich grassland and open water. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 2 (see performance indicators for feature1) **Conservation Objective for Feature 3: Lesser Horseshoe Bat *Rhinolophus hipposideros*** Vision for feature 3 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The Lesser horseshoe bat population will be capable of maintaining itself on a long-term basis as a viable component of its natural habitats. ▪ The natural range of lesser horseshoe bats will be neither being reduced nor will be likely to be reduced for the foreseeable future, and ▪ There will be sufficient habitat to maintain its populations on a long-term basis. ▪ At least four SSSI maternity roosts will be occupied annually by adult lesser horseshoe bats and their babies: ▪ Beech Cottage, Waterwynch SSSI, ▪ Orielton Stable Block and Cellars SSSI,

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Park House Outbuildings SSSI, ▪ Stackpole Courtyard Flats and Walled Garden SSSI ▪ The lesser horseshoe bat population at the component SSSI's will be stable or increasing. ▪ There will be a sufficiently large area of suitable habitat surrounding these roosts to support the bat population, including continuous networks of sheltered, broadleaved woodland, tree lines and hedgerows connecting the various types of roosts with areas of insect-rich grassland and open water. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 3 (see performance indicators for feature1) **Conservation Objective for Feature 4: Otter *Lutra lutra*** Vision for feature 4 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The Otter population will be capable of maintaining itself on a long-term basis as a viable component of its natural habitats. ▪ The natural range of otters will neither be reduced nor will be likely to be reduced for the foreseeable future, and ▪ There will be sufficient habitat to maintain its populations on a long-term basis. ▪ The otter population will be stable or increasing. ▪ There will be a sufficiently large area of suitable habitat to support an otter breeding population, including: ▪ Open water with sufficient food resources (notably eels and other fish species) and

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes **Location Grid Ref: SR976954** **JNCC Site Code: UK0014793** **Size (ha): 122.59** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ a continuous network of undisturbed sheltered resting places along the lake shoreline – including swamp, broadleaved woodland and calcareous scrub. ▪ All factors affecting the achievement of these conditions are under control. Performance indicators for Feature 4 (see performance indicators for feature1)
Component SSSIs	▪ Stackpole SSSI (Management units 1a - 1d) ▪ Stackpole Courtyard Flats and Walled Garden SSSI (Management units 2a & 2b) ▪ Slebech Stable Yard Loft, Cellars and Tunnels SSSI (Management units 3a & 3b) ▪ Felin Llwyn-gwair SSSI (Management unit 4) ▪ Carew Castle SSSI (Management unit 5) ▪ Beech Cottage Waterwynch SSSI (Management unit 6) ▪ Orielton Stable Block and Cellars SSSI (Management unit 7) ▪ Park House Outbuildings SSSI (Management unit 8) The site has been divided into 13 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	**Hard oligo-mesotrophic waters with benthic vegetation of *Chara*** ▪ **Water quality** - Significant work has been achieved with partners (such as the Environment Agency) to reduce the effects of point sources of nutrients on Bosherston Lakes. Quite low levels of phosphorus (P) are essential to maintain regular clear water conditions and ensure healthy stonewort growth. High phosphate concentrations cause ecological changes.

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Hydrology** o **Natural fluctuations in water levels** - Natural leakage (out of the lake-bed and shoreline) is probably the largest and most difficult issue to deal with. There are several known and probably a considerable number of unknown leaks, in the system. This is due to the Karstic nature of the limestone in this area and its numerous associated joints and fissures. In the longer term, sea level may rise, if so inevitably freshwater in the lower lakes will be more regularly displaced by saline conditions. Ultimately, the freshwater system may retreat and new management policies will have to be considered. In any such event the Conservation Objectives for this feature will obviously have to be revised. o **Anthropogenic influences - ground-water abstraction** - Groundwater abstraction in this area is currently exempt from licensing and so there is no regulatory control. At present there is insufficient information on the number of abstraction points and volumes being abstracted. The Environment Agency (EA) Catchment Abstraction Management Strategy (CAMS) assessment for the Bosherston lakes catchment, within CAMS Unit GWMU1 indicates that "known" abstractions are not having a discernible impact on the lake levels. Leakage from the base of the lakes is the main cause of falling water levels. ▪ **Sediment Load** - Suspended sediments, transporting nutrients from adjacent land outside the SAC/ SSSI boundary flow into the lakes via streams. As well as exacerbating existing eutrophication problems, gradually this is progressively filling in the lake system. ▪ **Fishery management** - Large populations of coarse fish (such as introduced roach for example) can distort the balance between the plant community, nutrient levels and the coarse fish population by eating small microscopic animals (zooplankton) that feed on tiny algae (phytoplankton). **Greater horseshoe bat *Rhinolophus ferrumequinum***

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Availability of suitable roosts** - Each of these roosts may have a variety of functions - such as being close to favoured feeding areas, used as mating sites, or possibly only used as winter roosts etc). Roost choice and location will also depend on the ambient temperatures each roost provides. The viability of the bat population within the SAC will depend very much on the availability of suitable roosts within a several mile radius of the SAC roosts. This range of different roosts is necessary to maintain populations of these bats, so all the roosts should be kept in a suitable condition for use by them. As with all bat roosts, there should be no modification to the roost, exposure to fumes or harmful/ irritant chemicals, disturbance (by people or animals) or excessive noise, without prior consultation with CCW. ▪ **Availability of bat fly-ways and feeding areas on surrounding land** - Greater horseshoe bats require sheltered unlit cover as they leave their roosts to feed at night. Key radial zones are: o **1km** - Vital to retain wooded areas and vegetation cover (including scrub), and habitat links i.e. woodland, tree lines, hedgerows and even limited sections of walls and fences. All woodland and enclosed vegetation with a few hundred metres of each component SSSI roost is likely to be important to the bats. All woodland, wooded watercourses, hedge lined lanes or even small roads are likely to be key features bats use. To cross some open areas bats may use fences or walls but the use is liable to be limited – most likely where habitat features have been removed in the past. The maintenance of cattle grazed pasture around greater horseshoe roosts should be considered vital in this area. o **1-3km** - Important to maintain hedgerow systems, scrub, wetland or marsh areas, and habitat links. Areas of thick hedgerows or scrub adjacent to cattle grazed pasture are likely to be of highest significance. Virtually all areas containing extensive hedgerows (particularly higher overgrown ones), scrub especially surrounding grazed pasture and/ or wet ground will be important bat foraging areas. The maintenance of these significant areas is vital to maintain the bats foraging areas. o **3-7km** - Areas with thick hedgerows around grazed pasture and pronounced habitat links should be

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma

maintained, not all areas will be used. A significant proportion of the most pronounced areas of extensive hedgerows (particularly higher overgrown ones), scrub and wet woodland - especially surrounding pasture and or wet ground will be important to the bats.

- **7-16km** - Only a small part of this area is likely to be used for foraging but flight routes may lead further, connecting to other roost sites. Maintenance of pronounced habitat links through the area will be important. Some of the most pronounced areas of extensive hedgerows (particularly higher overgrown ones), scrub and wet woodland - especially surrounding pasture and or wet ground will be important to the bats. These will be difficult to predict without carrying out radio tracking studies.

- **All zones** - Sheltered glades, of up to 10-15m across, should also be incorporated along which the bats can feed. Removal of habitat features or increase in night lighting may stop bats from using some routes. Cattle are the most suitable grazers for these grasslands as they produce the best dung for dung beetles, which are among the invertebrates on which the bats feed.

- **Lack of Disturbance to roosts – e.g. from fumes, lighting or noise** - As with all bat roosts, there should be no modification to SSSI component roosts, exposure to fumes or harmful/ irritant chemicals, disturbance (by people or animals) or excessive noise, without prior consultation with CCW. Disturbance to the bats can also be caused by extra lighting around roost access points. This may have an effect on the numbers of bats emerging at dusk. There will be a need to maintain liaison with SSSI roost owners and occupiers over these potential issues, taking account of their wishes.

Lesser horseshoe bat *Rhinolophus hipposideros*

- **Availability of suitable roosts, including roosts out-with the SAC** - As for greater horseshoe bat.

- **Availability of bat fly-ways and feeding areas on surrounding land** - Lesser horseshoe bats require sheltered

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	unlit cover as they leave their roosts to feed at night. Key radial zones are: o **1 km** - As for greater horseshoe bats. Plus, the maintenance of damp/ wet ground around roosts should be considered vital in this area. o **1-3km** - Hedgerows adjacent to semi improved damp or wet ground are likely to be of highest significance. o **3-7km** - Lesser horseshoe bats: only liable to be important for some of the larger colonies of bats, maintain habitat links through the areas. o **All zones** - As for greater horseshoe bat. ▪ **Disturbance to roosts – e.g. from fumes, lighting or noise** - As for greater horseshoe bat **Otter *Lutra lutra*** ▪ **Food availability** - Without good food availability, breeding may not occur. Previous studies indicate that eels form a high proportion of the otter diet at Bosherston Lakes and that Cyprinids may also be important in their diet. ▪ **Anthropogenic mortality** - Otter deaths, e.g. from road casualties, can have a considerable bearing on the structure and viability of the resident population. However, otters may die beyond the SAC/SSSI boundary and may not be seen and recorded. ▪ **Water quality/ water quantity and sediment load** - See Bosherston lakes open water factors above

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Freshwater availability** - Otters from the freshwater Bosherston Lakes system are known to swim and hunt for food along the nearby coastline within the contiguous Pembrokeshire Marine SAC. Otter is also a feature of the Pembrokeshire Marine SAC. Evidence of use of the marine environment will be from spraint surveys, plus direct observation. ▪ **Availability of undisturbed resting places** - Otters require a wide range of lying-up (holt) options within a large territory. These provide secure, undisturbed conditions for the male otter; the female (with or without her cubs); for the cubs (with or without their mother); and for the weaned and independent immatures. Much of the lakes extensive shoreline is relatively inaccessible and undisturbed, and so provides many potentially excellent lying up areas for otters.
SAC Condition Assessment	**Conservation status of Feature 1: Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp.*/ Calcium-rich nutrient- poor lakes, lochs and pools.** **Unfavourable: declining.** **Conservation status of Feature 2: Greater horseshoe bat *Rhinolophus ferrumequinum*** **Favourable: maintained.** This is supported by systematic counts of greater horseshoe bats carried out annually at the relevant component SSSI supporting the SAC. **Conservation status requirements of Feature 3: Lesser Horseshoe Bat *Rhinolophus hipposideros*** **Favourable: maintained.**

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes Location Grid Ref: SR976954 JNCC Site Code: UK0014793 Size (ha): 122.59 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	This is supported by systematic counts of lesser horseshoe bats are carried out annually at the relevant component SSSI supporting the SAC. **Conservation status of Feature 4: Otter *Lutra lutra*** **Unfavourable: declining.** Although adult or full-grown otters were seen each year, recent records suggest a decline in activity within the lake system and some uncertainty over breeding success during 5 of the last 7 years.
Vulnerabilities (includes existing pressures and trends)	▪ The lakes are vulnerable to **drought**, to **nutrient enrichment**, **introduced alien species** and to **siltation**. ▪ Both bat species are vulnerable to **physical deterioration of the buildings** which contain the roosts, to **human disturbance**, and to **habitat loss** and **disturbance within their key feeding areas**. ▪ The breeding otter population is vulnerable to **water pollution**, **human disturbance**, **entanglement in fishing gear** and **habitat loss**. ▪ **Changes in access and recreation** - Bosherston lakes and lakeside footpaths have a high recreational and educational interest and landscape value. Increases in access and recreation pressures may cause erosion of bank-side vegetation, disturbance to other features through and deposition of litter (e.g. fishing line/hooks etc). Fishing points should be maintained regularly to prevent fishing debris becoming entangled in lakeside vegetation and posing a potential threat to other SAC features (i.e. otters).
Landowner/ Management	Multiple ownership.

Site Name: Pembrokeshire Bat Sites and Bosherston Lakes **Location Grid Ref: SR976954** **JNCC Site Code: UK0014793** **Size (ha): 122.59** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Responsibility	
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans are unlikely to give rise to significant adverse effects at this site.

Site Name: **Pembrokeshire Marine** **Location Grid Ref: SR885969** **JNCC Site Code: UK0013116** **Size (ha): 138069.45** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	The Pembrokeshire Marine SAC extends from just north of Abereiddy on the north Pembrokeshire coast to just east of Manorbier in the south and includes the coast of the islands of Ramsey, Skomer, Grassholm, Skokholm, the Bishops and Clerks and The Smalls. The boundary of the site was determined to encompass the features for which the site was selected; it is not a representation of the precise extent of any one feature. The features are distributed throughout the site; no one occupies the whole site and several overlap in places.
Qualifying Features	**Annex I habitats primary reason for selection:** ▪ Estuaries; ▪ Large shallow inlets and bays; ▪ Reefs **Annex I habitats qualifying feature:** ▪ Sandbanks which are slightly covered by sea water all the time; ▪ Mudflats and sandflats not covered by seawater at low tide; ▪ Coastal lagoons * Priority feature ▪ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) ▪ Submerged or partially submerged sea caves **Annex II species primary reason for selection:** ▪ Grey seal *Halichoerus grypus* ▪ Shore dock *Rumex rupestris*

Site Name: **Pembrokeshire Marine** **Location Grid Ref: SR885969** **JNCC Site Code: UK0013116** **Size (ha): 138069.45** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Annex II species qualifying feature: ▪ Sea lamprey *Petromyzon marinus* ▪ River lamprey *Lampetra fluviatilis* ▪ Allis shad *Alosa alosa* ▪ Twaite shad *Alosa fallax* ▪ Otter *Lutra lutra*
Conservation Objectives	**Objectives for the qualifying habitats are:** ▪ To maintain at favourable conservation status their natural ranges and areas covered, the structures and functions necessary for the long-term maintenance of same, and the conservation status of their typical species on a long-term basis. **Objectives for the qualifying species are:** ▪ To maintain at favourable conservation status their long-term population viability, natural ranges and the structures and functions of their habitats within the site.
Component SSSIs	Intertidal areas of Pembrokeshire Marine SAC SSSI mapping for Pembrokeshire Marine SAC is available on the Countryside Council for Wales (CCW) website at http://www.ccw.gov.uk/landscape--wildlife/protecting-our-landscape/special-landscapes--sites/protected-landscapes/sssis/sssi--report.aspx
Key Environmental Conditions (factors that maintain site	Annex I marine habitats within the Pembrokeshire Marine SAC are:

Site Name: Pembrokeshire Marine Location Grid Ref: SR885969 JNCC Site Code: UK0013116 Size (ha): 138069.45 Designation: SAC	Habitats Regulations Assessment: Data Proforma
integrity	▪ extremely heterogeneous ▪ subject to extremely wide range and variation of structural and functional processes ▪ extremely diverse ▪ either relatively little degraded by human action and/ or are the outcome of natural processes following human perturbation or alteration of habitat structure or function Many characteristics have been identified as being important to the Pembrokeshire Marine habitat features. For the most part, it was the scientific quality and extent of the typical, or highly valued but typifying components which contributed to the site being selected for that feature; in summary: ▪ physical entity of habitat, integrity of habitat structure and the large extent of habitats ▪ extremely wide range of habitat variation ▪ extremely wide range of functional processes ▪ relatively limited human modification of the above ▪ species and community diversity; ▪ the large extent of many communities; ▪ the high quality of many of the communities, species populations and assemblages resulting from the relatively limited human modification of distribution and extent of habitat and structural and functional processes ▪ species populations of particular conservation importance because of their rarity, ecological importance, high diversity or abundance or bio-geographical distribution (notably isolated edge of range populations) Habitat features comprise multiple components of varying individual scale, distribution, significance, quality and sensitivity but all of which in combination, contribute to overall importance and quality of one or more features.

Site Name: **Pembrokeshire Marine** **Location Grid Ref: SR885969** **JNCC Site Code: UK0013116** **Size (ha): 138069.45** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	High habitat and biological diversity is of primary importance throughout the site, and notably in the reefs habitat and in the ria-estuary of Milford Haven. The extent, distribution and quality of both abiotic and biotic components are vitally important. The site's location at a biogeographical boundary between northern and southern species distributions, the many rare, scarce or unusual habitats, communities, species, and the pre-existence of areas with UK designations for their marine biological importance all contribute to the site's importance. The features are characterised by complex interrelationships not only within, but also between the habitat features - many habitats are encompassed within the shallow inlets and bays and estuaries habitat features and there is significant overlap of components contributing to both marine inlets and estuaries.
SAC Condition Assessment	Not available
Vulnerabilities (includes existing pressures and trends)	For more detailed and up to date information relating to vulnerabilities refer to Table 4 'Activities-factors matrix' (pg. 10) and Section 5 (Advice as to operations which may cause deterioration/disturbance) of the Pembrokeshire Marine SAC Regulation 33 advice. ▪ **Water quality** issues such as those associated with dredge-spoil disposal. These are kept under review through liaison with the Environment Agency, Ministry of Agriculture, Fisheries and Food and Milford Haven Port Authority. ▪ **Pollution** originating from the transport or exploration/production of oil and gas are of concern. Management of shipping using Milford Haven following the Sea Empress oil-spill in 1996 has improved and will be kept under review by the Port Authority. ▪ **Commercial fishing** - Marine communities are vulnerable to damage by certain fishing methods.

Site Name: Pembrokeshire Marine **Location Grid Ref: SR885969** **JNCC Site Code: UK0013116** **Size (ha): 138069.45** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ **Recreational pressures** - including gathering of firewood and kindling, could affect intertidal features.
Landowner/ Management Responsibility	N/A
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from urban and economic development, recreation and tourism and infrastructure (water abstraction and pollution) as a result of the WSPU. ▪ In Pembrokeshire the risks to European sites that have been identified tend to be associated with those arising from population pressures with the need for further urban development although there are also issues associated with water quality and hydrology that may also emerge particularly affecting Pembrokeshire Marine SAC. Given the variety of plans and projects for the Milford Haven area, there are merits in exploring a partnership approach amongst those responsible for plans and major projects affecting European sites in this area.

Site Name: Preseli **Location Grid Ref: SN110320** **JNCC Site Code: UK0012598** **Size (ha): 2,705.9** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Exceeding 500m Mynydd Preseli is an upland area of northern Pembrokeshire that marks the southernmost extent of the Cambrian Mountains. The Preseli SAC comprises the core section of the Hills and incorporates the extensive Mynydd Preseli SSSI and the smaller commons of Waun Fawr SSSI, Waun Isaf and Gors Fawr. Mynydd Preseli and Gors Fawr are physically linked whilst Waun Isaf and Waun Fawr are separate/ detached components of the SAC.
Qualifying Features	**Annex I habitats qualifying feature:** ▪ Northern Atlantic wet heaths with *Erica tetralix* ▪ European dry heaths ▪ Depressions on peat substrates of *Rhynchosporion* ▪ Alkaline fens **Annex II species primary reason for selection:** ▪ Southern damselfly *Coenagrion mercuriale* ▪ Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia* ▪ Slender green feather-moss *Drepanocladus* (*Hamatocaulis*) *vernicosus*
Conservation Objectives	**Conservation Objective for Feature 1: Southern Damselfly *Coenagrion mercuriale*** Vision for Southern Damselfly The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The density of adult males, during sampling, will be at least 1 male per 10 square metres of breeding habitat

Site Name: Preseli Location Grid Ref: SN110320 JNCC Site Code: UK0012598 Size (ha): 2,705.9 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ There will be at least 3500 square metres of breeding habitat ▪ All factors affecting the feature will be under control Performance indicators for Southern Damselfly The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Preseli SAC Management Plan. **Conservation Objective for Feature 2: Marsh Fritillary *Euphydryas aurinia*** Vision for marsh fritillary butterfly The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: A healthy population of the marsh fritillary butterfly will be present on and around the SAC. There will be sufficient suitable and good condition habitat to support viable meta-populations of the butterfly which is dependent here on marshy grassland and flush, with tussocks of purple moor-grass and plenty of the caterpillar's main food-plant, devil's bit scabious. The swards will vary in height so that there are short 'lawn' areas for the caterpillars to sun themselves on, and taller tussocky areas to provide shelter. For each of the two Meta-populations present within the SAC: ▪ There should be at least 200 larval webs per hectare of Good Condition habitat ▪ There should be at least 50ha of Suitable habitat on the SAC or within a 2km radius around it. ▪ At least 10ha of this suitable habitat should be Good Condition habitat

Site Name: Preseli Location Grid Ref: SN110320 JNCC Site Code: UK0012598 Size (ha): 2,705.9 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ All factors affecting the feature must be under control Performance indicators for Marsh Fritillary (see performance indicators for the Southern Damselfly above) **Conservation Objective for Feature 3: Slender green feather-moss *Hamatocaulis vernicosus*** Vision for Slender Green Feather Moss The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: Slender green feather moss is a qualifying feature in the SAC, but has been found to be considerably more frequent and abundant both within Preseli SAC, and indeed in a number of other sites in Wales than was previously thought. In the light of this, it has been decided to treat the feature as part of the Rare mosses on damp ground SSSI feature. Performance indicators for Slender Green Feather Moss (see performance indicators for the Southern Damselfly above) **Conservation Objective for Feature 4: Alkaline fens** Vision for Alkaline Fen The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: Alkaline fen will be present in patches across the site and display a range of plant and insect species typical of

Site Name: Preseli Location Grid Ref: SN110320 JNCC Site Code: UK0012598 Size (ha): 2,705.9 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	the habitat, including the southern damselfly. The flushes supporting this specific habitat will comprise short, open vegetation rich in small mosses, sedges and plants characteristic of less acidic conditions. ▪ Alkaline fens will be present in 8 out of the 10 pink areas as shown on the accompanying map. (See map below) ▪ Characteristic flush species such as Menyanthes trifoliata, Triglochin palustre, Anagallis tenella, Pedicularis palustris and Pinguicula vulgaris will be present ▪ Species indicative of negative change, such as Juncus squarrosus, will be absent. ▪ Scrub species such as willow Salix and birch Betula will also be largely absent. Performance indicators for Alkaline fen (see performance indicators for the Southern Damselfly above) **Conservation Objective for Feature 5: Depressions on peat substrates of the *Rhynchosporion*** Vision for Depressions on peat substrates of the *Rhynchosporion* The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: Depressions on peat substrates is a habitat type which typically occurs in complex mosaics with wet heath and flush habitats. The vegetation will be open, and have an abundance of species such as white beak-sedge Rhynchospora alba, the bog moss Sphagnum auriculatum, marsh clubmoss Lycopodiella inundata and round-leaved sundew Drosera rotundifolia. The amount of this habitat on the site has not been clearly defined yet, but is thought to be around 1-2% of the total site area. ▪ Depressions on peat substrates of the Rhynchosporion will occupy roughly 1-2% of the SAC, and be present in at least two management units (currently units 2 and 3).

Site Name: Preseli Location Grid Ref: SN110320 JNCC Site Code: UK0012598 Size (ha): 2,705.9 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The following plants will be common: white beaked sedge Rhynchospora alba, the bog moss, Sphagnum denticulatum, round-leaved sundew Drosera rotundifolia and, in relatively base-rich sites, brown mosses such as Drepanocladus revolvens and Scorpidium scorpioides. ▪ The vegetation in these areas will be typically very open and competitive species indicative of under-grazing, particularly purple moor-grass Molinia caerulea, will be kept in check. ▪ Scrub species such as willow Salix and birch Betula will also be largely absent. Performance indicators for Depressions on peat substrates of the *Rhynchosporion* (see performance indicators for the Southern Damselfly above) **Conservation Objective for Feature 6: European dry heaths** Vision for Dry Heath The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Dry heath will cover at least 11% of Mynydd Preseli SSSI and display a range of plant, insect and bird species typical of the habitat. ▪ The following plants will be common in the dry heath: heather Calluna vulgaris; bell heather Erica cinerea and western gorse Ulex gallii. ▪ Competitive species indicative of under-grazing, particularly bracken Pteridium aquilinum, purple moor-grass Molinia caerulea and western gorse Ulex gallii will be kept in check. Performance indicators for Dry Heath (see performance indicators for the Southern Damselfly above)

Site Name: Preseli **Location Grid Ref: SN110320** **JNCC Site Code: UK0012598** **Size (ha): 2,705.9** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Conservation Objective for Feature 7: Northern Atlantic wet heaths with Erica tetralix Vision for feature Wet Heath The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: Wet heath will cover at least 11% of the site and display a range of plant species typical of the habitat. Most of the wet heath will have a mixture of tussocks of purple moor-grass, separated by closely grazed patches rich in deer grass, bog mosses and heathers such as cross-leaved heath. A proportion should also have a range of short sedges and flowering plants such as round leaved sundew. ▪ The following plants will be common in the wet heath: heather Calluna vulgaris; cross-leaved heath Erica tetralix; purple moor-grass Molinia caerulea; bog asphodel Narthecium ossifragum; short sedges Carex species; mosses including bog moss Sphagnum species; devil's bit scabious Succisa pratensis. ▪ Competitive species indicative of under-grazing, particularly Purple Moor Grass Molinia caerulea and Western Gorse Ulex gallii will be kept in check. ▪ Bracken, and scrub species such as willow Salix and birch Betula will also be largely absent from the wet heath. Performance indicators for Wet Heath (see performance indicators for the Southern Damselfly above)
Component SSSIs	Mynydd Preseli SSSI (Management units 1 - 8) Waun Fawr SSSI (Management unit 9) The site has been divided into 9 management units. A map of the management units can be viewed on the CCW website.

Site Name: Preseli **Location Grid Ref: SN110320** **JNCC Site Code: UK0012598** **Size (ha): 2,705.9** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Key Environmental Conditions (factors that maintain site integrity	▪ **Grazing** - The reinstatement or continuation of an appropriate grazing regime is required. The current winter transhumance to the Castlemartin section of the Limestone Coast of South West Wales SAC is a vital part of this upland pastoral regime. *Coenagrion mercuriale* requires well-grazed open wet heath and mire vegetation with small runnels or streams. *Drepanocladus vernicosus* requires boggy slopes flushed with spring water, where the vegetation is quite low-growing. ▪ **Water Quality** - The flushes, fens, springs and seepages which arise on Mynydd Preseli itself are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts. ▪ **Water Quantity** - Several springs arising on the common are used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas will impact on flush vegetation.
SAC Condition Assessment	**Conservation Status of Southern damselfly *Coenagrion mercuriale*** The site clearly attains Favourable Condition status upon the amount of suitable breeding habitat. The population attribute of adult male damselflies failed to attain Favourable Condition status due to extended periods of sub-optimal weather conditions; however the 248 males recorded in good weather conditions suggest that, given longer periods of good weather conditions during monitoring, Favourable Condition would have easily been achieved. Therefore the feature is considered to be in **Favourable Condition: Unclassified**. **Conservation Status of Marsh fritillary** The results of the 2006 SAC monitoring indicate that the status of marsh fritillary at Preseli SAC is **Unfavourable**. Two meta-populations are thought utilise areas of suitable habitat both within the SAC and in the surrounding countryside. The extent and quality of habitat for both these meta-populations may fall short of the suggested

Site Name: Preseli Location Grid Ref: SN110320 JNCC Site Code: UK0012598 Size (ha): 2,705.9 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	minimum of 50 ha of suitable habitat (including 10 ha of Good Condition habitat) needed to support a viable population. **Conservation Status of Slender green feather moss *Hamatocaulis vernicosus*** The condition of the slender green feather moss *Hamatocaulis vernicosus* is assessed as **Favourable: unclassified**. The status is dependant upon the condition of the flushes where the species occurs and is unlikely to change unless there are changes to the condition or extent of the flush systems and is considered to be Favourable. **Conservation Status of Alkaline fens** As performance indicator targets are met, the condition of the feature is assessed as **Favourable: unclassified** (December 2004). **Conservation Status of Depressions on peat substrates of the *Rhynchosporion*** The *Rhynchosporion* habitat was monitored by the SAC monitoring team in 2004 and found to be in **Favourable: unclassified** condition, with all of the plots achieving the set targets. The results from the monitoring plots show that a relatively high proportion (over 70% in each plot) of the *Rhynchosporion* is in good condition. **Conservation Status of Dry heath** Dry heath habitats were monitored by the SAC monitoring team in 2004 and found to be in **Unfavourable: unclassified** condition with no plots achieving the set targets. Dry heath failed mainly on the condition of the dwarf shrubs, which were mostly both sparse and low in growth due to sustained herbivore activity. Bryophyte cover was also consistently poor. The dry heath is generally overgrazed and we would wish to see

Site Name: Preseli Location Grid Ref: SN110320 JNCC Site Code: UK0012598 Size (ha): 2,705.9 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	development of more mature heather with associated succession to scrub/woodland in places. **Conservation Status of Wet heath** The wet heath was monitored in 2004 and condition assessed as **Unfavourable: unclassified** with no plots achieving the set targets. The overall pattern in the condition of wet heath is less clear and many individual samples passed within most of the plots, however it can be said that there was generally a higher failure rate due to condition of the dwarf shrubs and the high cover of Molinia.
Vulnerabilities (includes existing pressures and trends)	▪ **Grazing** - *Coenagrion mercuriale* requires well-grazed open wet heath and mire vegetation with small runnels or streams. *Drepanocladus vernicosus* requires boggy slopes flushed with spring water, where the vegetation is quite low-growing. Both species are therefore vulnerable to inappropriate levels or the cessation of grazing. ▪ **Burning** - Areas of the common have been burnt on an annual basis. These are usually carried out by the commoners to encourage fresh growth for stock, but occasionally may be accidental burns or arson attacks. Although focussed on the heath, burns have spread across the flushes. Burning can damage the bryophyte layer and encourages a vigorous re-growth of more competitive, fire-resistant species like purple moor-grass. Marsh fritillary colonies are susceptible to damage by burning. The current lack of control over burning means key butterfly locations may be vulnerable. ▪ **External Factors** - Suitable habitat for the Marsh Fritillary may exist outside the SAC boundaries. Waun Fawr and Waun Isaf are roughly 13km apart and there is little suitable habitat between them. It therefore seems likely that the two sites belong to different meta-populations: Waun Fawr to the 'Ambleston - Puncheston' meta-population, and Waun Isaf to the 'Mynachlog-ddu – Crymych' meta-population. ▪ **Habitat Fragmentation** - Fragmentation of habitat patches should be reversed.

Site Name: Preseli **Location Grid Ref: SN110320** **JNCC Site Code: UK0012598** **Size (ha): 2,705.9** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ **Pollution** - The flushes, fens, springs and seepages which arise on Mynydd Preseli itself are not subject to run-off from agricultural activities such as fertiliser application. They could still be affected by pesticides, for example following sheep-dip application or spraying of bracken, or airborne pollutants such as nitrous oxides from vehicle exhausts. ▪ **Water Quantity** - Alterations to natural drainage channels, or increases in water extraction will have had a damaging effect on southern damselfly populations. Several springs arising on the common are used for private water supplies by properties bordering it. Modifying the hydrology of these spring areas will impact on flush vegetation.
Landowner/ Management Responsibility	Common land and multiple ownership, which includes conservation organisations.
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans are unlikely to give rise to significant adverse effects at this site.

Site Name: River Teifi **Location Grid Ref: SN515508** **JNCC Site Code: UK0012670** **Size (ha): 715.58** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	At 122 km, the Afon Teifi is one of the longest rivers in Wales, with one of the most pristine river catchments in lowland Britain. From its source in the oligotrophic Teifi Pools, situated at 455m in the Cambrian Mountains, the river descends steeply through the upland pastures and flows through the raised mire complex of Cors Caron. Below Cors Caron the Teifi meanders through lowland farmland, joined by a number of small tributaries from either side of the valley. Rocky, tree-lined sections are a feature of the lower part of the river, and there are several impressive gorges, particularly at Alltycafan, Henllan and Cilgerran, with spectacular waterfalls at Cenarth. Below Cilgerran gorge the estuary begins, winding its way past the wildlife-rich Teifi Marshes and the town of Cardigan before flowing out into Cardigan Bay. The whole of the river from source to sea is included in the SAC, as are ten tributaries: the Groes, Brefi, Dulas, Grannell, Clettwr, Cerdin, Tyweli, Ceri, Cych and Piliau. The run-off characteristics and nutrient status are significantly modified by land use in the catchment, which is predominantly pastoral with some woodland and commercial forestry in the headwaters and a limited amount of arable in the lower catchment.
Qualifying Features	**Annex I habitats primary reason for selection:** ▪ Water courses of plain to montane levels with *ranunculion fluitantis* and *callitricho-batrachion* vegetation **Annex I habitats qualifying feature:** ▪ Oligotrophic to mesotrophic standing waters with *littorelletea uniflorae* and/or *isoëto-nanojuncetea* vegetation **Annex II species primary reason for selection:** ▪ Brook lamprey *lampetra planeri* ▪ River lamprey *lampetra fluviatilis* ▪ Atlantic salmon *salmo salar* ▪ Bullhead *cottus gobio*

Site Name: River Teifi **Location Grid Ref: SN515508** **JNCC Site Code: UK0012670** **Size (ha): 715.58** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ European otter *lutra lutra* ▪ Floating water-plantain *luronium natans* **Annex II species qualifying feature:** ▪ Sea lamprey *petromyzon marinus*
Conservation Objectives	The ecological status of the watercourse is a major determinant of Favourable Condition Status for all features. The required conservation objective for the watercourse is defined below. **Conservation Objective for the watercourse** ▪ The capacity of the habitats in the SAC to support each feature at near-natural population levels, as determined by predominantly unmodified ecological and hydromorphological processes and characteristics, should be maintained as far as possible, or restored where necessary. ▪ The ecological status of the water environment should be sufficient to maintain a stable or increasing population of each feature. This will include elements of water quantity & quality, physical habitat, community composition & structure. It is anticipated that these limits will concur with the relevant standards used by the Review of Consents process given in Annexes 1-3. ▪ Flow regime, water quality and physical habitat should be maintained in, or restored as far as possible to, a near-natural state, in order to support the coherence of ecosystem structure and function across the whole area of the SAC. ▪ All known breeding, spawning and nursery sites of species features should be maintained as suitable habitat as far as possible, except where natural processes cause them to change. ▪ Flows, water quality, substrate quality, and quantity at fish spawning sites and nursery areas will not be depleted by abstraction, discharges, engineering or gravel extraction activities or other impacts to the extent that these sites are damaged or destroyed.

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The river planform and profile should be predominantly unmodified. Physical modifications having an adverse effect on the integrity of the SAC, including, but not limited to, revetments on active alluvial river banks using stone, concrete or waste materials, unsustainable extraction of gravel, addition or release of excessive quantities of fine sediment, will be avoided. ▪ River habitat SSSI features should be in favourable condition. ▪ Artificial factors impacting on the capability of each species feature to occupy the full extent of its natural range should be modified where necessary to allow passage, e.g. weirs, bridge sills, acoustic barriers. ▪ Natural factors such as waterfalls, which may limit the natural range of a species feature, or dispersal between naturally isolated populations, should not be modified. ▪ Flows during the normal migration periods of each migratory fish species feature will not be depleted by abstraction to the extent that passage upstream to spawning sites is hindered. ▪ Flow objectives for assessment points in the Teifi Catchment Abstraction Management Strategy (CAMS) as they relate to the Afon Teifi SAC will be agreed between EA and CCW as necessary. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 1 of this document. ▪ Levels of nutrients, in particular phosphate, will be agreed between EA and CCW for each Water Framework Directive water body in the Afon Teifi SAC, and measures taken to maintain nutrients below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 2 of this document. ▪ Levels of water quality parameters that are known to affect the distribution and abundance of SAC features will be agreed between EA and CCW for each Water Framework Directive water body in the Afon Teifi SAC, and measures taken to maintain pollution below these levels. It is anticipated that these limits will concur with the standards used by the Review of Consents process given in Annex 3 of this document. ▪ Levels of suspended solids will be agreed between EA and CCW for each Water Framework Directive water body in the Afon Teifi SAC. Measures including, but not limited to, the control of suspended sediment generated by agriculture, forestry and engineering works, will be taken to maintain suspended solids below

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma

these levels.

- Potential sources of pollution not addressed in the Review of Consents, such as contaminated land, will be considered in assessing plans and projects.

Conservation Objective for Features 2-6: Brook lamprey *Lampetra planeri*; River lamprey *Lampetra fluviatilis*; Sea lamprey *Petromyzon marinus*; Atlantic salmon *Salmo* salar; Bullhead *Cottus gobio*

Vision for features 2-6

The vision for these features is for them to be in a favourable conservation status, where all of the following conditions are satisfied:

- The conservation objective for the water course as defined above must be met
- The population of the feature in the SAC is stable or increasing over the long term.
- The natural range of the feature in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches where predominantly suitable habitat for each life stage exists over the long term. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms e.g. suitable flows to allow upstream migration, depth of water and substrate type at spawning sites, and ecosystem structure and functions e.g. food supply. Suitable habitat need not be present throughout the SAC but where present must be secured for the foreseeable future. Natural factors such as waterfalls may limit the natural range of individual species. Existing artificial influences on natural range that cause an adverse effect on site integrity, such as physical barriers to migration, will be assessed in view of the objective below.
- There is, and will continue to be, a sufficiently large habitat to maintain the feature's population in the SAC on a long-term basis.

Performance indicators for Features 2-3

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the River Teifi SAC Management Plan. **Conservation Objective for Feature 7: European otter *Lutra lutra*** Vision for feature 7 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The population of otters in the SAC is stable or increasing over the long term and reflects the natural carrying capacity of the habitat within the SAC, as determined by natural levels of prey abundance and associated territorial behaviour. ▪ The natural range of otters in the SAC is neither being reduced nor is likely to be reduced for the foreseeable future. The natural range is taken to mean those reaches that are potentially suitable to form part of a breeding territory and/or provide routes between breeding territories. The whole area of the Teifi SAC is considered to form potentially suitable breeding habitat for otters. The size of breeding territories may vary depending on prey abundance. The population size should not be limited by the availability of suitable undisturbed breeding sites. Where these are insufficient they should be created through habitat enhancement and where necessary the provision of artificial holts. No otter breeding site should be subject to a level of disturbance that could have an adverse effect on breeding success. Where necessary, potentially harmful levels of disturbance must be managed. ▪ The safe movement and dispersal of individuals around the SAC is facilitated by the provision, where necessary, of suitable riparian habitat, and underpasses, ledges, fencing etc at road bridges and other artificial barriers.

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma

Performance indicators for feature 7

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the River Teifi SAC Management Plan.

Conservation Objective for Feature 8: Floating water-plantain *Luronium natans*

Vision for feature 8

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The conservation objective for the water course as defined above must be met.
- The floating water-plantain populations will be viable throughout their current distribution in the SAC (maintaining themselves on a long-term basis). Each floating water-plantain population must be able to complete sexual and/or vegetative reproduction successfully. Potential for genetic exchange between floating water-plantain populations, in and/or outside the SAC, must be evident in the long-term. Dispersal of floating water-plantain must be unhindered.
- The SAC will have sufficient suitable habitat to support floating water-plantain populations within their current distribution. There will be no contraction of the current floating water-plantain distribution in the SAC. Suitable habitat is defined in terms of near-natural hydrological and geomorphological processes and forms e.g. water levels in Teifi Pools, water depth, stability of river flows, stability of bed substrate, ecosystem structure and functions e.g. nutrient levels, and shade.

Performance indicators for feature 8

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma

and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the River Teifi SAC Management Plan.

Conservation Objective for Feature 9: Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*

Vision for feature 9

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- The conservation objective for the water course as defined above must be met
- The Littorelletea uniflorae aquatic upland lake community will be present in all five of the Teifi Pools (Llyn Hir, Llyn Teifi, Llyn Egnant, Llyn y Gorlan and Llyn Bach), and will be self-maintaining on a long-term basis.
- A fully developed Littorelletea community will be present in Llyn Hir, including all of the component species typical of the SAC feature, as represented in the Afon Teifi SAC.
- The typical species are defined with reference to the species composition of the JNCC standing water type for the SAC feature, unless differing from this type due to natural variability when other typical species may be defined as appropriate.
- For each of Llyn Teifi, Llyn Egnant, Llyn y Gorlan and Llyn Bach, the extent and species composition of the Littorelletea community will be stable or increasing in range. There will be no deterioration in the conservation status of the feature as represented in these lakes.

Performance indicators for feature 9

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	performance indicators can be found within the River Teifi SAC Management Plan.
Component SSSIs	▪ Afon Teifi SSSI The site has been divided into 7 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	The ecological structure and functions of the site are dependent on hydrological and geomorphological processes (often referred to as hydromorphological processes), as well as the quality of riparian habitats and connectivity of habitats. Animals that move around and sometimes leave the site, such as migratory fish and otters, may also be affected by factors operating outside the site. ▪ **Hydrological processes** - in particular river flow (level and variability) and water chemistry, determine a range of habitat factors of importance to the SAC features, including current velocity, water depth, wetted area, substrate quality, dissolved oxygen levels and water temperature. Maintenance of both high 'spate' flows and base-flows is essential. Reductions in flow may reduce the ability of the adults of migratory fish to reach spawning sites. Water-crowfoot vegetation thrives in relatively stable, moderate flows and clean water. The flow regime should be as near to natural as constraints will allow in order to support the functioning of the river ecosystem. Two of the Teifi Pools, Llyn Teifi and Llyn Egnant, are artificially regulated for water abstraction, and this affects the species composition of the oligotrophic lake vegetation they contain. The compensation flows released below the dams ensure that downstream river flow is not adversely affected. ▪ **Geomorphological processes** - of erosion by water and subsequent deposition of eroded sediments downstream create the physical structure of the river habitats. While some sections of the river are naturally stable, especially where they flow over bedrock, others undergo continual and at times rapid change through the erosion and deposition of bed and bank sediments as is typical of meandering sections within floodplains (called 'alluvial' rivers). These processes help to sustain the river ecosystem by allowing a

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	continued supply of clean gravels and other important substrates to be transported downstream. In addition, the freshly deposited and eroded surfaces, such as shingle banks and earth cliffs, enable processes of ecological succession to begin again, providing an essential habitat for specialist, early-successional species. Processes at the wider catchment scale generally govern processes of erosion and deposition occurring at the reach scale, although locally factors such as the effect of grazing levels on riparian vegetation structure may contribute to enhanced erosion rates. In general, management that interferes with natural geomorphological processes, for example preventing bank erosion through the use of hard revetments or removing large amounts of gravel, are likely to be damaging to the coherence of the ecosystem structure and functions. ▪ **Riparian habitats** - including bank sides and habitats on adjacent land, are an integral part of the river ecosystem. Diverse and high quality riparian habitats have a vital role in maintaining the SAC features in a favourable condition. The type and condition of riparian vegetation influences shade and water temperature, nutrient run-off from adjacent land, the availability of woody debris to the channel and inputs of leaf litter and invertebrates to support in-stream consumers. Light, temperature and nutrient levels influence in-stream plant production and habitat suitability for the SAC features. Woody debris is very important as it provides refuge areas from predators, traps sediment to create spawning and juvenile habitat and forms the base of an important aquatic food chain. Otters require sufficient undisturbed riparian habitat for breeding and resting sites. It is important that appropriate amounts of tree cover, tall vegetation and other semi-natural habitats are maintained on the riverbanks and in adjacent areas, and that they are properly managed to support the SAC features. This may be achieved for example, through managing grazing levels, selective coppicing of riparian trees and restoring adjacent wetlands. The mobility of the Teifi has resulted in the formation of significant areas of off-channel habitat in the form of ox-bows, wet woodlands, willow scrub etc. These are predominantly away from the main channel, and form important areas for otter to rest-up in or support breeding sites. In the few

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	urban sections the focus may be on maintaining the river as a communication corridor but this will still require that sufficient riparian habitat is present and managed to enable the river corridor to function effectively. ▪ **Habitat connectivity** - is an important property of river ecosystem structure and function. Many of the fish that spawn in the river are migratory, depending on the maintenance of suitable conditions on their migration routes to allow the adults to reach available spawning habitat and juvenile fish to migrate downstream. For resident species, dispersal to new areas, or the prevention of dispersal causing isolated populations to become genetically distinct, may be important factors. Naturally isolated feature populations that are identified as having important genetic distinctiveness should be maintained. Artificial obstructions including weirs and bridge sills can reduce connectivity for some species. In addition, reaches subject to depleted flow levels, pollution, or disturbance due to noise, vibration or light, can all inhibit the movement of sensitive species. The dispersal of semi-terrestrial species, such as the otter, can be adversely affected by structures such as bridges under certain flow conditions; therefore these must be designed to allow safe passage. The continuity of riparian habitats enables a wide range of terrestrial species, to migrate and disperse through the landscape. Connectivity should be maintained, or restored where necessary, as a means to ensure access for the features to sufficient habitat within the SAC. Where the Teifi flows through Cors Caron, a 1.5 km reach in the centre of the bog was artificially straightened at the end of the 19th century. This has had the effect of reducing the naturalness and habitat diversity of the river and its connectivity with the surrounding fen and mire habitats of Cors Caron SAC. The previous meandering channel still exists in the form of cut off meanders, and restoration of this section to its previous course would enhance the river ecosystem structure and function, and its connectivity with the raised bog system. ▪ **External factors** - operating outside the SAC, may also be influential, particularly for the migratory fish and otters. For example, salmon may be affected by inshore fishing and environmental conditions prevailing in their north Atlantic feeding grounds. Otters may be affected by developments that affect resting and breeding sites outside the SAC boundary.

Site Name: River Teifi **Location Grid Ref: SN515508** **JNCC Site Code: UK0012670** **Size (ha): 715.58** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
SAC Condition Assessment	**Conservation Status of Feature 1: Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation** Conservation Status (2006) Status: **Favourable** Although this feature was previously reported as unfavourable, baseline survey and monitoring work carried out for CCW has provided new information to support an assessment of favourable for this feature. Based on current available information, the recent level of flow depletion downstream of abstractions in the Afon Teifi SAC is not considered to be damaging to this feature, either through limiting its range or adversely affecting its community composition. **Conservation Status of Feature 2 and 3: Brook lamprey *Lampetra planeri* and River lamprey *Lampetra fluviatilis*** Conservation status (2005) Status: **Unfavourable: Unclassified** It has not been possible to distinguish between these two species during monitoring, due to the reliance on juvenile stages (ammocoetes). Anecdotal evidence suggests that both species are likely to be present in many reaches, though brook lamprey are expected to predominate in the headwaters and river lamprey may be the more abundant species in the main channel and the lower reaches of larger tributaries. More information on the relative abundance of these two species in different parts of the Afon Teifi SAC is desirable. **Conservation Status of Feature 4: Sea lamprey *Petromyzon marinus*** Conservation status (2005)

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Status: **Unfavourable: Unclassified** A lack of juvenile sea lamprey in surveys of this type is common to a number of rivers despite the presence of spawning adults. The contractors postulate that separation of habitat is occurring between brook/river lamprey and sea lamprey, the former spawning earlier in the year (March/April) compared to sea lamprey, which spawn in June. They consider that juvenile sea lamprey are being excluded from optimum habitat and are having to utilise silt beds in deeper water, habitat that is not monitored as part of the standard assessment. **Conservation Status of Feature 5: Atlantic salmon *Salmo salar*** Conservation status (2007) Status: **Unfavourable: Unclassified** The current unfavourable status is the result of a precautionary assessment of juvenile distribution and abundance and also the presence of adverse factors, in particular the potential for flow depletion and localised water quality failures. Invertebrate depletion due to sheep dip pollution is a factor in the upper reaches of the river, and acidification due to forestry affects some tributaries. **Conservation status and management requirements of Feature 6: Bullhead *Cottus gobio*** Conservation status (2006) Status: **Unfavourable: Unclassified** The current unfavourable status results from the presence of adverse factors, in particular flow depletion and localised water quality failures. Records obtained from juvenile salmon monitoring show that bullhead are

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	widespread in the main river and tributaries. **Conservation Status of Feature 7: European otter *Lutra lutra*** Conservation status (2004) Status: **Favourable** The conservation status of otters in the Afon Teifi SAC is determined by monitoring their distribution, breeding success, and the condition of potential breeding and feeding habitat outlined in the Performance Indicators. Their current condition can be considered favourable, but with scope for further improvement, if habitat and other natural factors can be maintained and enhanced. **Conservation Status of Feature 8: Floating water-plantain *Luronium natans*** Conservation status (2004) Status: **Favourable** **Conservation Status of Feature 9: Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*** Conservation status (2007) Status: **Favourable** The condition assessment is based on recent monitoring of this feature at the Teifi Pools and on work carried out in support of the Environment Agency's Review of Consents process for the Dŵr Cymru Welsh Water

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	abstraction licences for Llyn Teifi and Llyn Egnant.
Vulnerabilities (includes existing pressures and trends)	▪ **Water abstraction** - Entrainment in water abstractions directly impacts on lamprey population dynamics through reduced recruitment and survival rates. Information on likely rates of entrainment of lamprey ammocoetes is required before acceptable levels can be assessed. Llyn Teifi and Llyn Egnant are artificially regulated as reservoirs for public water supply, operated by Dŵr Cymru Welsh Water since the late 1950s. The impact of the current operation of these reservoirs has been investigated as part of the Environment Agency's Review of Consents process (Environment Agency Wales, 2007), which concluded that the floating water-plantain is remarkably tolerant of the fluctuating water levels that result from the abstraction regime, and that there is no negative impact on the feature. The outcome of the assessment with reference to the Littorelletea community was that although a lower abstraction rate from the regulated lakes would be of benefit to this feature, the current abstraction licences do not have a significant negative impact upon the integrity of the feature as a whole within the SAC, in terms of its conservation objectives. ▪ **Grazing** - Although the catchment has been grazed for centuries, the effects of grazing, particularly by cattle, are relevant. Cattle grazing can damage water-crowfoot beds, introduce silt (through poaching and localised erosion), and can lead to enrichment or pollution of the river. Conversely, grazing can increase the variety of niches available to plants and animals; reduce the ingress of marginal vegetation into the main channel; and control the development of woody vegetation. ▪ **Riparian habitat** - Fencing river banks to limit access to the channel will address the negative implications of cattle grazing but, at the same time, is likely to accelerate the development of woody vegetation and rank, bank-top vegetation, with longer-term implications for shading levels. It may also increase the likelihood of invasion by non-native plant species such as Japanese knotweed and Himalayan balsam. Balanced decisions are required relating to the optimal stocking level and grazing duration to minimise the potential for negative effects.

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Water quality** - Localised water quality issues can have an impact on the feature. There are a number of smaller sewage treatment works within the SAC, which can have a detrimental effect if not operating to a high standard. The Atlantic salmon is the focus for much of the management activity carried out on the Teifi. The relatively demanding water quality and spawning substrate quality requirements of this feature mean that reduction in diffuse pollution and siltation impacts is a high priority. Measures to address these problems include the establishment of buffer zones on reaches adjacent to intensively managed livestock grazing or arable land. Tree management, especially coppicing and pollarding to increase light levels to the channel, is also carried out. In-stream liming, using limestone sand, has been trialled in the acidified Berwyn tributary. In recent years, much of this work has been supported or directly undertaken by Environment Agency Wales under their 'Sustainable Fisheries' programme. ▪ **Pollution** - In the Afon Teifi catchment, the most significant sources of diffuse pollution and siltation are from agriculture, including fertiliser run-off, livestock manure, silage effluent and soil erosion from ploughed land. The most intensively used areas such as heavily trampled gateways and tracks can be especially significant sources of polluting run-off. Among toxic pollutants, sheep dip and silage effluent present a particular threat to aquatic animals in this predominantly rural area. Contamination by synthetic pyrethroid sheep dips, which are extremely toxic to aquatic invertebrates, has a devastating impact on invertebrate populations and can deprive fish populations of food over large stretches of river. These impacts can arise if recently dipped sheep are allowed access to a stream or hard standing area, which drains into a watercourse. Pollution from organophosphate sheep dips and silage effluent can be very damaging locally. Pollution from slurry and other agricultural and industrial chemicals, including fuels, can kill all forms of aquatic life. Pollution of rivers with toxic chemicals, such as PCBs, was one of the major factors identified in the widespread decline of otters during the last century. There should be no increase in pollutants potentially toxic to otters. Discharges from sewage treatment works, urban drainage, engineering works such as road improvement schemes, contaminated land, and other domestic and industrial sources can also be significant causes of pollution, and must be managed appropriately. ▪ **Invasive non-native plants** - may also have a detrimental impact on this feature, and control programmes

Site Name: River Teifi Location Grid Ref: SN515508 JNCC Site Code: UK0012670 Size (ha): 715.58 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	for Japanese knotweed and Himalayan balsam should be considered, with the aim of reducing their extent in the SAC. There is a risk that the introduction of invasive non-native plants, such as Australian swamp stonecrop Crassula helmsii, could also have a detrimental impact on the floating water-plantain. A significant source of such introductions could be via the boots, clothing or equipment of anglers visiting the Teifi Pools, and angling clubs should be encouraged to follow best practice guidelines for cleansing/ decontaminating clothing and equipment before travelling between angling waters. ▪ **Barriers to migration** - The impacts of barriers to migration and flow depletion are highlighted in the assessment of conservation status for this feature. The most significant potential obstruction to migration of lamprey is the Cenarth Falls (unit 2). Although sea lamprey are known to get past them, no transforming Lampetra spp. were found above the falls, so it is not known whether they present an obstruction to the smaller river lamprey. The falls are of a size that they may present a significant barrier to lamprey movement at certain flows. In addition to Cenarth Falls, four small weirs exist on the Ceri that may prevent access to the upper parts of this tributary for migratory lamprey. There is also another group of weirs fairly low down in the Clettwr sub-catchment, which may prevent access to the majority of this tributary. The impact of artificial barriers should be assessed on a case-by-case basis. Physical modification of these barriers is required where depth/velocity/duration of flows is unsuitable to allow passage. ▪ **Development** - activities that may cause long-term or temporary physical, acoustic, chemical and sediment barrier effects will need to be addressed in the assessment of specific plans and projects. ▪ **Climate change** - may pose a threat to the Teifi Pools through accelerated erosion of peat within the catchments, changes to temperature and rainfall regimes, subsequent increases in sedimentation and in turn, changes in macrophyte composition and structure. Conversely, reductions in sulphur deposition and consequent increases in lake pH, ANC (acid neutralising capacity) and DOC (dissolved organic carbon) may lead to increased diversity in lake macrophyte species assemblages.
Landowner/ Management	Multiple ownership, some of which under that of conservation organisations.

Site Name: River Teifi **Location Grid Ref: SN515508** **JNCC Site Code: UK0012670** **Size (ha): 715.58** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Responsibility	
HRA/AA Studies undertaken that address this site	*Environment Agency Wales* Teifi Habitats Directive Appropriate Assessment Investigative Project: Teifi Pools Stage 3b Appropriate Assessment, Teifi SAC. *EAW Review of Consents Report HWM/HD/Teifi/05/TP/001/v3 (2007).* ▪ The current operation of Llyn Teifi and Llyn Egnant as reservoirs for public water supply has been investigated in considerable detail as part of the Environment Agency's Review of Consents process, and the impact of abstraction licences on the SAC features have been subjected to Appropriate Assessment (Environment Agency Wales, 2007). ▪ The outcome of the assessment with reference to the *Littorelletea* community was that although a lower abstraction rate from the regulated lakes would be of benefit to this feature, the current abstraction licences do not have a significant negative impact upon the integrity of the feature as a whole within the SAC, in terms of its conservation objectives. HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from recreation and tourism as a result of the WSPU.

Site Name: St. David's **Location Grid Ref: SM728285** **JNCC Site Codes: UK0013045** **Size (ha): 935.47** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	This site includes two major sections of coast in addition to Ramsey and several smaller islands. These sections of cliff-land carry fine examples of a wide range of typical maritime vegetation, ranging from rock-crevice communities on the most exposed cliff faces to maritime grassland, heath and scrub in the hinterland. They have numerous rare plants and invertebrates, and a high density of nesting chough and peregrine falcon. Ramsey is a rugged island, nationally important for its grey seal breeding colony, the largest in south-west Britain, as well as significant populations of guillemots, razorbills, kittiwakes and chough. Ramsey has classic sea-cliff vegetation, extensive maritime heath and associated rare species. The heathland has several pools with scarce aquatic plants including floating water-plantain.
Qualifying Features	**Annex I habitats primary reason for selection:** ▪ Vegetated sea cliffs of the Atlantic and Baltic coasts; ▪ European dry heaths **Annex II species primary reason for selection:** ▪ Floating water-plantain *Luronium natans*
Conservation Objectives	**Conservation Objective for Feature 1: Vegetated sea cliffs of the Atlantic and Baltic coasts - Maritime Cliff and Crevice vegetation** Vision for Maritime Cliff and Crevice vegetation The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

Site Name: St. David's Location Grid Ref: SM728285 JNCC Site Codes: UK0013045 Size (ha): 935.47 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Cliff and crevice vegetation will occur naturally on suitable cliff sections throughout the site. ▪ The vegetation will be composed of native plants such as sea spurrey *Spergularia rupicola* and sea *samphire Crithmum maritimum*. ▪ The establishment of non-native plants such as Hottentot fig *Carpobotus edulis* will be discouraged. ▪ The factors affecting the feature are under control Performance indicators for Maritime Cliff and Crevice vegetation The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the St David's SAC Management Plan. **Conservation Objective for Feature 2: Vegetated sea cliffs of the Atlantic and Baltic coasts - Maritime Grassland vegetation** Vision for Maritime Grassland The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Maritime Grassland will occupy at least x% of the total site area (to be set). ▪ The following plants will be common in the maritime grassland: thrift *Armeria maritima*; spring squill *Scilla verna* and sea plantain *Plantago maritima* ▪ Competitive species indicative of under-grazing, particularly cocksfoot *Dactylis glomerata*, bracken *Pteridium aquilinum* and western gorse *Ulex gallii* will be kept in check. ▪ The factors affecting the feature are under control.

Site Name: St. David's Location Grid Ref: SM728285 JNCC Site Codes: UK0013045 Size (ha): 935.47 Designation: SAC	Habitats Regulations Assessment: Data Proforma

Performance indicators for maritime grassland

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the St David's SAC Management Plan.

Conservation Objective for Feature 3: Vegetated sea cliffs of the Atlantic and Baltic coasts - Maritime Heathland vegetation

Vision for Maritime Heathland

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- Maritime heathland will occupy at least x% of the total site area (to be set).
- The following plants will be common in the maritime heathland: heather *Calluna vulgaris*; bell heather *Erica cinerea* and spring squill *Scilla verna*.
- Competitive species indicative of under-grazing, particularly bracken *Pteridium aquilinum* and gorse *Ulex europaeus* will be kept in check.
- The factors affecting the feature are under control

Conservation Objective for Feature 4: European Dry Heath (4030)

Vision for Dry Heath

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions

Site Name: St. David's Location Grid Ref: SM728285 JNCC Site Codes: UK0013045 Size (ha): 935.47 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	are satisfied: ▪ Dry Heath will occupy areas of the site where heathland extends beyond the zone of maritime influence and lacks the species characteristic of maritime heath as a result ▪ Much of the dry heath will be short and open. ▪ The factors affecting the feature are under control **Conservation Objective for Feature 5: Floating Water Plantain *Luronium natans*** Vision for Floating Water Plantain The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ At least one population is well established. ▪ This population covers at least 15 square metres in two or more separate pools. ▪ Current areas of open water to be maintained on Ramsey; other pool habitats within the SAC to be kept in a suitable state for Luronium where possible. ▪ The factors affecting the feature are under control
Component SSSIs	▪ St David's Peninsula Coast SSSI ▪ Strumble Head - Llechdafad Cliffs SSSI ▪ Ramsey SSSI The site has been divided into 24 management units. A map of the management units can be viewed on the CCW website.

Site Name: St. David's **Location Grid Ref: SM728285** **JNCC Site Codes: UK0013045** **Size (ha): 935.47** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Key Environmental Conditions (factors that maintain site integrity	**Vegetated sea cliffs of the Atlantic and Baltic coasts: Maritime Cliff and Crevice Vegetation** ▪ **Coastal Erosion processes** - feature is maintained by natural processes. **Vegetated sea cliffs of the Atlantic and Baltic coasts: Maritime Grassland** ▪ **Livestock grazing** - The more exposed, seaward areas of maritime grassland are maintained by 'natural' environmental factors - including exposure to salt spray, thin soils and climatic extremes. Further away from the cliff edges, the maritime grassland vegetation has been maintained by traditional grazing practices. Without an appropriate grazing regime, it would become rank and turn to bracken, bramble or gorse scrub. Light grazing by animals - ideally cattle in summer or ponies throughout year - is key to maintaining these areas. **Vegetated sea cliffs of the Atlantic and Baltic coasts: Maritime Heathland & European Dry Heath** ▪ **Livestock grazing** - The more exposed, seaward areas of maritime heathland are maintained by 'natural' environmental factors - including exposure to salt spray, thin soils and climatic extremes. Further away from the cliff edges, the heathland vegetation has been maintained by traditional grazing practices. Without an appropriate grazing regime, it would become rank and turn to gorse scrub. Light grazing by animals - ideally cattle in summer or ponies throughout year - is key to maintaining these areas. **Floating Water Plantain** ▪ **Livestock grazing** - The pools need to be kept open, and grazing animals are key to this. Regular pool edge disturbance by grazing deer and, more recently, ponies has maintained ideal conditions for floating water plantain here.

Site Name: St. David's Location Grid Ref: SM728285 JNCC Site Codes: UK0013045 Size (ha): 935.47 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ **Water Quantity** - Pools must remain at least seasonally wet. Water flows are being protected and enhanced where possible - the plant has colonised new pools created for breeding lapwings *Vanellus vanellus* in recent years. ▪ **Water Quality** - Water quality is protected by the island context and the setting of the pools amongst permanent, low fertility habitats. The pools are unlikely to be affected by pollutants but could be vulnerable to eutrophication caused by roosting birds such as gulls. ▪ **Non-native plants** - Vigilance should be maintained to ensure that *Crassula helmsii* and other invasive alien plants do not become established in pools on Ramsey and elsewhere in the SAC.
SAC Condition Assessment	**Conservation Status of Maritime Cliff and Crevice Vegetation** 2005: **Favourable Maintained** Performance indicators have not been developed for this element of the vegetated sea cliff feature and no monitoring has been carried out. A judgement on condition has therefore been made on ongoing surveillance of the feature by CCW conservation officers. **Conservation Status of Maritime Grassland** 2005: **Unfavourable recovering** Performance indicators have been developed for this element of the vegetated sea cliff feature but they have not been monitored against. A judgement on condition has therefore been made on ongoing surveillance of the feature by CCW conservation officers. **Conservation Status of Maritime heathland and Dry heath** 2005: **Unfavourable recovering**

Site Name: St. David's Location Grid Ref: SM728285 JNCC Site Codes: UK0013045 Size (ha): 935.47 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Monitoring of the coastal and dry heath in 1997 focussed on 4 key management units. This work concluded that this aggregated feature was in unfavourable condition. Much conservation effort has subsequently been focussed on the heathland management within this SAC. This has clearly paid dividends, as stands of neglected heath across the site have undergone recovery management. However, the conservation objective for the feature is quite stringent, particularly with respect to open ground/ short vegetation. Surveillance of the key heathland block at St David's Head suggests that even this area - with secure, sustained management effort - would not yet meet performance targets. The heathland area at Point St John (Unit 12 - Pencarnan) has been somewhat neglected in the last few years, and is likely to have lost condition since the 1997 monitoring. **Conservation Status of Floating water plantain** 2005: **Favourable** The status of floating water plantain in the St David's SAC determined by personal observation, is Favourable. The plant is spread across seven discreet waterbodies in the central part of Ramsey Island. By visual estimation, the total extent appears to exceed 30 square metres. The number of flowering plants varies annually; no formal counts or monitoring have been carried out.
Vulnerabilities (includes existing pressures and trends)	**Vegetated sea cliffs of the Atlantic and Baltic coasts: Maritime Cliff and Crevice Vegetation** ▪ **Pollution** - Oil spills and other pollution episodes may cause short-term damage. ▪ **Recreational Impacts** - Localised impacts of climbing and coasteering. **Vegetated sea cliffs of the Atlantic and Baltic coasts: Maritime Grassland** ▪ **Burning** - can damage the vegetation, invertebrates and soil structure and encourages a vigorous re-growth of more competitive, fire-resistant species like bracken.

Site Name: St. David's **Location Grid Ref: SM728285** **JNCC Site Codes: UK0013045** **Size (ha): 935.47** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	Vegetated sea cliffs of the Atlantic and Baltic coasts: Maritime Heathland & European Dry Heath ▪ **Burning** - Regular burning takes place on some sections, some of it as part of controlled management programmes. If not used properly and backed by an appropriate grazing regime, it can lead to a vigorous re-growth of competitive, fire-resistant species like western gorse. ▪ **Pollution** - The heath could be affected by airborne pollutants such as nitrous oxides from vehicle exhausts. **Floating Water Plantain** ▪ **Water Quality** - The pools are unlikely to be affected by pollutants but could be vulnerable to eutrophication caused by roosting birds such as gulls. A negative factor that could become significant is the spread of *Crassula helmsii* in the St. David's area; there is some potential for the habitat to become unsuitable through guanotrophication if the water bodies become attractive to roosting gulls or other seabirds. ▪ **Non-native plants** - Vigilance should be maintained to ensure that *Crassula helmsii* and other invasive alien plants do not become established in pools on Ramsey and elsewhere in the SAC.
Landowner/ Management Responsibility	▪ Ramsey Island - RSPB ▪ Coast - mixed ownership
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site.

Site Name: St. David's Location Grid Ref: SM728285 JNCC Site Codes: UK0013045 Size (ha): 935.47 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from urban and economic development and infrastructure (water abstraction and pollution) as a result of the WSPU.

Special Protection Areas (within plan area)

Site Name: Carmarthen Bay **Location Grid Ref: SS357991** **JNCC Site Code: UK9014091** **Size (ha): 33411.27** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Carmarthen Bay is a wide, shallow bay west of the Gower Peninsula. It is approximately 28 km from east to west by 20 km north to south. Carmarthen Bay marine SAC and SPA embraces the whole of the bay. The Bay is, from an ecological perspective, a multiple interest site containing a range of very important EU-level habitat. Its estuaries – Taf, Tywi, Gwendraeth and Loughor (Burry Inlet) - together form a single functional unit and represent some 3.4% of the UK SAC estuary resource. The first three of the four abovementioned rivers drain into the Bay via a common mouth. Also of note are the Bay's extensive saltmarshes – the largest in South Wales (5,760 ha), as well as its intertidal mud and sandflats (approx. 7,000 ha) – 2.4% of the entire UK resource, accounting for around 10% of the SAC's area. The Carmarthen Bay SPA is used regularly by circa 1.1 % of the biogeographic population of migratory and overwintering common scoter. Within the UK, Carmarthen Bay is the most important site for this species. The shallow nature of the Bay suits common scoter, which typically occupy waters less than 10 m in depth.
Qualifying Features	Article 4.2 Qualification (79/409/EEC) Over winter the area regularly supports: ▪ Common Scoter *Melanitta nigra* 1.0% of the population
Conservation Objectives	**Objectives for the Common Scoter:** ▪ Their number in the SPA, as expressed by rolling 5-year peaks, is at or above the 1997/98-2001/02 peak ▪ Their macro-scale distribution within the site conforms with the 2000-2004 pattern, *i.e.* post 'Sea Empress

Site Name: Carmarthen Bay **Location Grid Ref: SS357991** **JNCC Site Code: UK9014091** **Size (ha): 33411.27** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	recovery period' ▪ The extent and quality of supporting habitats is at or above 1999/2000 values ▪ The abundance of prey and diversity of prey species is at or above 1999/2000 values, and at levels meeting the requirements of the number of common scoter present within the site ▪ They are allowed to inhabit their feeding grounds and resting areas with minimum disturbance and no disturbance on their moulting ground at Cefn Sidan, and may move unhindered between them
Component SSSIs	SSSI mapping for the Carmarthen Bay SPA is available on the Countryside Council for Wales (CCW) website at http://www.ccw.gov.uk/interactive-maps/protected-areas-map.aspx
Key Environmental Conditions (factors that maintain site integrity	▪ **Extent and Quality of Habitats** - The shallow nature of the Bay suits common scoter which typically occupy waters less than 10 m in depth, allowing them to feed on benthic communities (on and within sand dominated bottom sediments) up to 10 km offshore. The potential feeding area (based on distribution and abundance of prey species) within the Carmarthen Bay SPA is large, from north of a line stretching east from Tenby across the Bay towards Burry Holms, stopping at a point approximately 8 km south of Pembrey Sands. Outside the breeding period, common scoter are predominantly marine, resting and feeding in flocks in shallow, inshore waters, generally 500 m to ca. 2 km from land, where depth not more than 10 to 20 m and animal food are abundantly accessible. ▪ **Abundance of prey and diversity of prey species** - In marine and brackish-water areas, scoter feed especially on blue mussel, fewer cockles, clams and other bivalves and gastropods, periwinkles, and laver snails. They feed occasionally on crustaceans, particularly isopods, amphipods, and small crabs; annelids; and echinoderms. Invertebrates, foremost the bivalves, are thought to form a good source of food for the scoter in the Carmarthen Bay SPA. However, the patchy distribution of prey species, especially those of larger year classes, may be pertinent to the distribution of the common scoter in the Carmarthen Bay SPA.
SAC Condition Assessment	Not available

Site Name: Carmarthen Bay **Location Grid Ref: SS357991** **JNCC Site Code: UK9014091** **Size (ha): 33411.27** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Vulnerabilities (includes existing pressures and trends)	▪ **Pollution** - major oil pollution incidents in the vicinity of the site have impacted the scoter population in the past and, despite improvements in shipping management, pollution response and contingency planning, hydrocarbon pollution remain a risk to the sea duck feature. Continuing improvements in shipping management, especially at the major oil-port of Milford Haven, management of the wider environment of the Carmarthen Bay & Estuaries and nearby Pembrokeshire Marine SACs, together with CCW's close involvement in the formulation of marine pollution contingency plans should help to further reduce the likelihood and impact of pollution incidents at sea. ▪ **Disturbance** - sea-surface or aerial activity creating significant disturbance of feeding and/ or resting scoter flocks would adversely affect the population by stimulating additional energy expenditure. Significant increases in recreational, commercial or military water-surface or aerial activities during winter months, and during late summer, when moulting birds are particularly vulnerable, could result in such risk. Major infrastructure developments, such as for offshore energy generation, would generate a significant risk of disturbance during both construction and operation if sited inappropriately. ▪ **Changes to sediment structures or transport** - significant changes to the sediment structures or sediment transport regime in the Bay could indirectly threaten the integrity of the scoter population through impacts to benthic communities containing the birds' food source. Management of seabed aggregate exploitation is being enhanced, with zoning of the exploitation to avoid sensitive areas of nature conservation importance, and CCW is consulted over applications to dredge aggregates. Current harbour maintenance regimes are considered unlikely to have significant impact on sediment processes; however, major changes to harbour infrastructure and consequential maintenance regimes would need to be carefully considered in terms of their impacts on sediment processes. ▪ **External factors** - the integrity of the scoter population using Carmarthen Bay is also vulnerable to risk factors outside the site, for example at breeding grounds, and broad-scale factors such as long-term climatic

Site Name: Carmarthen Bay **Location Grid Ref: SS357991** **JNCC Site Code: UK9014091** **Size (ha): 33411.27** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	change.
Landowner/ Management Responsibility	Multiple ownership, including conservation organisations.
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from recreation and tourism as a result of the WSPU.

Site Name: Castlemartin Coast **Location (Lat & Long):** **51 39 29 N** **05 03 30 W** **JNCC Site Code: UK9014061** **Size (ha): 1,122.32** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Castlemartin Coast is located on the south-west peninsula of Wales about 10 km south of Pembroke. Here 20 km of rocky coast with sea cliffs of Carboniferous Limestone is of national geological and biological interest. The sea-cliffs around Castlemartin support the largest concentration of breeding seabirds on the Pembrokeshire mainland, including large and easily viewable colonies of guillemots, razorbills and kittiwakes at Stack Rocks. Rare breeding birds include the Red-billed Chough at one of its main breeding locations in Wales and representing about 4% of the UK population). The choughs feed along the cliffs, adjacent to coastal grasslands, heath and dunes.
Qualifying Features	**Article 4.1 Qualification (79/409/EEC)** During the breeding season the area regularly supports: ▪ Red-billed chough *Pyrrhocorax pyrrhocorax*
Conservation Objectives	**Conservation Objective for the Red-billed chough *Pyrrhocorax pyrrhocorax*** ▪ A breeding chough population will occur along the limestone coast, between Freshwater West and Barafundle Bay. ▪ This population will be maintained at a minimum of 12 breeding pairs (representing 3.5% of the GB population, at the 1993 SPA designation level) ▪ Choughs will continue to, feed, roost and breed successfully, unhindered by human recreational activities (e.g. climbing). ▪ The majority of pairs will rear young each year, with an annual average productivity of at least two young per occupied territory. ▪ Choughs will continue to have access to large amounts of optimal feeding habitat (open areas with very

Site Name: Castlemartin Coast **Location (Lat & Long):** **51 39 29 N** **05 03 30 W** **JNCC Site Code: UK9014061** **Size (ha): 1,122.32** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	short grassland and heath vegetation <1cm to <3cm in height) within all cliff-top management units and within dune grassland management units at Broomhill Burrows, Brownslade and Linney Burrows and on Stackpole Warren. ▪ Yellow ant-hills, an important summer food resource, will occur in coastal turf, throughout the SPA, at densities up to approximately 550 ant-hills per ha. ▪ A non-breeding chough population (variable in number between 10 and 50 birds) made up largely of juvenile and sub-adult birds will occur at any season. Performance indicators for Red-billed chough *Pyrrhocorax pyrrhocorax* The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Castlemartin Coast SPA Management Plan.
Component SSSIs	▪ Broomhill Burrows SSSI (Management units 1a to 1d) ▪ Castlemartin Cliffs and Dunes SSSI (Management units 2a to 2g) ▪ Stackpole SSSI (Management units 3a to 3g) ▪ Gower coast - Rhossili to Porth Eynon SSSI (Management units 21 & 22) The site has been divided into 20 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Grazing** - is essential to maintain open short invertebrate-rich turf, required by chough. Dung from grazing animals should also provide a further source of invertebrate populations for choughs and so livestock used here should not be dosed with avermectins. A semi-natural rabbit population also makes a very important

Site Name: Castlemartin Coast Location (Lat & Long): 51 39 29 N 05 03 30 W JNCC Site Code: UK9014061 Size (ha): 1,122.32 Designation: SPA	Habitats Regulations Assessment: Data Proforma
	contribution to the overall grazing levels required to maintain accessible invertebrates (especially in the dunes) utilised especially by flocks of juvenile and non-breeding choughs. They scrape and maintain bare areas for colonising plants, for insects requiring warm open sandy soils and also keep in check young, potentially invasive scrub. ▪ **Prey availability** - Yellow ant-hills can form quite dense concentrations in key areas - e.g. between 150 to 550 ant-hills per ha have been mapped on Stackpole Head - in management units 3c and 3d. There are also high concentrations along the Castlemartin Range coast. Care must be exercised not to damage important ant-hill components through management activities - including vegetation mowing, maintenance of paths/tracks and stock fencing.
SAC Condition Assessment	**Conservation Status of the Red-billed chough *Pyrrhocorax pyrrhocorax*** The Red-billed chough is considered to be in **FAVOURABLE** condition (October 2007).
Vulnerabilities (includes existing pressures and trends)	▪ **Access and recreational pressures** - Castlemartin's coastal footpath is an extremely popular visitor destination. The coastal cliffs are the principal destination for most walkers, and large numbers of climbers. Access to the western part of the SSSI in Castlemartin Range West is limited to non-firing days (usually only available at weekends and is subject to military and conservation briefings and permit arrangements). Currently access and recreation pressures are fairly well regulated by an on site ranger and information service. Long-standing voluntary agreements with climbers, also ensures that chough nest site are quite well protected. ▪ **Disease** - Rabbit populations have been affected by disease (including Viral haemorrhagic disease).

Site Name: Castlemartin Coast **Location (Lat & Long):** **51 39 29 N** **05 03 30 W** **JNCC Site Code: UK9014061** **Size (ha): 1,122.32** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	▪ **Burning** - of coastal heath is potentially damaging to some plants, breeding bird and insect populations and so should be avoided as a principal management tool. However, occasional accidental patch burns may help keep in check invasive European gorse and other woody vegetation, and provide localised more open conditions required by birds like chough.
Landowner/ Management Responsibility	Multiple ownership.
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from infrastructure (water abstraction and pollution) as a result of the WSPU.

Site Name: Grassholm **Location (Lat & Long):** **51 43 50 N** **05 28 43 W** **JNCC Site Code: UK9014041** **Size (ha): 10.7** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Grassholm Island is situated 10 miles off the Pembrokeshire coast, separated from the mainland by the Irish Sea. The SPA is a tourist attraction within the St. Davids peninsula. During the breeding season the 32,000 pairs of gannets nesting on the reserve make it impossible for visitors to land without causing undue disturbance. The colony is of international importance, supporting approximately 12% of the world population of this species.
Qualifying Features	**Article 4.2 Qualification (79/409/EEC)** During the breeding season the area regularly supports: ▪ Gannet *Morus bassanus*
Conservation Objectives	**Conservation Objective for Feature 1: Gannet** Vision for Gannet The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The population will not fall below 30,000 pairs in three consecutive years, ▪ It will not drop by more than 25% of the previous year's figures in any one year. ▪ There will be no decline in this population significantly greater than any decline in the North Atlantic population as a whole. Performance indicators for Gannet

Site Name: Grassholm **Location (Lat & Long):** **51 43 50 N** **05 28 43 W** **JNCC Site Code: UK9014041** **Size (ha): 10.7** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Grassholm SPA Management Plan.
Component SSSIs	Grassholm SSSI (Management units 1 and 2 (marine)) The site has been divided into 2 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Lack of disturbance** - during the breeding season is extremely important.
SAC Condition Assessment	**Conservation Status of Feature 1: Gannet** 2004: **Favourable Maintained** Monitoring has demonstrated a year-on-year increase to a current estimate of 32,409 pairs.
Vulnerabilities (includes existing pressures and trends)	▪ **Human disturbance** - Tourist boats now circumnavigate the island, and there is a code of conduct agreed with tourist boat operators to minimise disturbance from the sea. There is still the potential for private boats to cause disturbance, although the remote nature of the island tends to deter all but the most intrepid visitors. Disturbance by RAF aircraft has occurred on occasion in the past, but there has been an agreement with the RAF in place since 1998 regarding air avoidance areas, which are avoided except in emergencies.

Site Name: Grassholm **Location (Lat & Long):** **51 43 50 N** **05 28 43 W** **JNCC Site Code: UK9014041** **Size (ha): 10.7** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	▪ **Fisheries Management** - Changes in the availability of food due to changes in fisheries policy or fishing methods are likely to have a significant impact on the population. ▪ **Pollution** - Oil spills and other pollution episodes may cause damage. ▪ **Litter** - Marine litter, especially plastic, can result in wounding and/or death of individual gannets that become entangled. This may, for example, occur during feeding at sea, when entanglement can cause drowning, or because plastic or nylon line, together with other persistent litter is often used as a nesting material, causing entanglement on the nest of both adults and young.
Landowner/ Management Responsibility	RSPB
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans are unlikely to give rise to significant adverse effects at this site.

Site Name: Ramsey and St David's Peninsula Coast **Location (Lat & Long):** **51 54 30 N** **05 18 12 W** **JNCC Site Codes: UK9014062** **Size (ha): 845.63** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Site Description	This site includes one major section of coast running around the peninsula of St David's in addition to Ramsey and several smaller islands. These coastal habitats support an important resident population of Chough *Pyrrhocorax pyrrhocorax*. These birds nest at high density in traditional locations within the cliffs and depend on the diverse mix of coastal habitats present and their low intensity agricultural management. Ramsey is a rugged island, nationally important for its grey seal breeding colony, the largest in south-west Britain, as well as significant populations of guillemots, razorbills, kittiwakes and chough. Ramsey has classic sea-cliff vegetation, extensive maritime heath and associated rare species.
Qualifying Features	**Article 4.1 Qualification (79/409/EEC)** During the breeding season the area regularly supports: ▪ Pyrrhocorax pyrrhocorax at least 3.2% of the GB breeding population
Conservation Objectives	**Conservation Objective for Feature 6: Chough *Pyrrhocorax pyrrhocorax*** The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The breeding population of Chough is at least 11 pairs ▪ Breeding success averages at least 2.5 chicks/pair

Site Name: Ramsey and St David's Peninsula Coast **Location (Lat & Long):** **51 54 30 N** **05 18 12 W** **JNCC Site Codes: UK9014062** **Size (ha): 845.63** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	▪ Sufficient suitable habitat is present to support the populations ▪ The factors affecting the feature are under control Performance indicators for Feature 6 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the St David's SAC Management Plan, which includes the Ramsey and St David's Peninsula Coast SPA.
Component SSSIs	▪ St David's Peninsula Coast SSSI ▪ Ramsey SSSI The site has been divided into 19 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Extent and Quality of habitats** - continued well being of chough and peregrine depends upon the adequate provision of feeding and breeding habitat and absence of serious disturbance from humans. The Maritime grassland feature within the St David's Coast SAC is used for foraging and must achieve favourable condition. The National Trust and other landowners, with financial help from CCW management agreements and the ESA scheme, have re-introduced traditional grazing of coastal slopes, safeguarding and extending the chough's short sward feeding grounds. On Ramsey the RSPB's management benefits both species. Here, reduction in rabbit grazing due to Rabbit Viral Haemorrhagic Disease is a problem and any decline in the quality and extent of feeding grounds due to lack of grazing

Site Name: Ramsey and St David's Peninsula Coast **Location (Lat & Long):** **51 54 30 N** **05 18 12 W** **JNCC Site Codes: UK9014062** **Size (ha): 845.63** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	will have to be compensated for by habitat management (eg grazing by sheep).
SAC Condition Assessment	Not available
Vulnerabilities (includes existing pressures and trends)	▪ **Disturbance** - The site is subject to recreational pressure, particularly from tourists walking the coast path. The impact of this disturbance is minimized by most of the nest sites being on inaccessible high cliffs, and by the numbers of visitors to Ramsey being strictly limited.
Landowner/ Management Responsibility	▪ Ramsey Island - RSPB ▪ Coast - mixed ownership
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans are unlikely to give rise to significant adverse effects at this site.

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Skomer, Skokholm and Middleholm are three islands lying off the extreme south-west tip of Pembrokeshire in south-west Wales. They are bounded by cliffs that reach 70 m on Skomer. The SPA as a whole is of special interest for its breeding seabird colonies, in particular for Manx Shearwater, Puffin, Storm Petrel, Razorbill, Guillemot, Lesser Black-backed Gull, Kittiwake, as well as for breeding Chough and Short-eared Owl. There is some vegetation management including bracken control but, for the most part, these habitats are maintained by natural processes. Habitat and species management tends to be restricted to scything, hand pulling, 'bruising' and brush cutting of bracken along all path edges, rabbit exclosures and other small areas, and occasional use of Asulam for chemical bracken control where mechanical control is problematic.
Qualifying Features	**Article 4.1 Qualification (79/409/EEC)** During the breeding season the area regularly supports: ▪ Chough *Pyrrhocorax pyrrhocorax* ▪ Short-eared owl *Asio flammeus* ▪ Storm petrel *Hydrobates pelagicus* **Article 4.2 Qualification (79/409/EEC)** During the breeding season the area regularly supports: ▪ Lesser black-backed gull *Larus fuscus* ▪ Manx shearwater *Puffinus puffinus*

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	▪ Puffin *Fratercula arctica*
Conservation Objectives	**Conservation Objective for Feature 1: Chough *Pyrrhocorax pyrrhocorax*** Vision for feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The Skomer breeding population will be at least 3 pairs ▪ The Skokholm breeding population will be at least 1 pair ▪ The SPA breeding population will be 4 pairs, (this currently represents around 5 % of the Pembrokeshire chough population and 1.2% of the GB population) ▪ Breeding success will be 1.5 chicks/pair ▪ Sufficient suitable habitat will be present to support the populations ▪ The factors affecting the feature are under control Performance indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Skomer and Skokholm SPA Management Plan. **Conservation Objective for Feature 2: Short-eared owl *Asio flammeus***

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	Vision for feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The breeding population will be at least 6 pairs ▪ Breeding success will be at least 1 chicks/pair ▪ Sufficient suitable habitat will be present to support the populations ▪ The factors affecting the feature are under control Performance indicators for Feature 2 (see performance indicators for feature 1) **Conservation Objective for Feature 3: Storm petrel *Hydrobates pelagicus*** Vision for feature 3 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The population of storm petrel will be at least 3500 pairs within the SPA, ▪ Sufficient suitable nesting sites will be present to support at least the current populations ▪ The factors affecting the feature are under control

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	NB. Breeding success is not examined in this species due to its sensitivity to disturbance Performance indicators for Feature 3 (see performance indicators for feature 1) **Conservation Objective for Feature 4: Lesser black-backed gull Larus fuscus** Vision for feature 4 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ During the breeding season the population of lesser black-backed gull will be at least 20,300 pairs within the SPA. This re presents around 16.4% of the current breeding Western European/Mediterranean/western African population ▪ Breeding success will be at least 0.4 chicks/pair ▪ Sufficient suitable nesting sites will be present to support at least the current populations ▪ The factors affecting the feature are under control Performance indicators for Feature 4 (see performance indicators for feature 1) **Conservation Objective for Feature 5: Manx shearwater *Puffinus puffinus*** Vision for feature 5

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ During the breeding season the population of Manx shearwater will be at least 150,000 pairs within the SPA (this represents around half of the current breeding population). ▪ Breeding success will be at least 0.5 chicks per egg laid ▪ The factors affecting the feature are under control Performance indicators for Feature 5 (see performance indicators for feature 1) **Conservation Objective for Feature 6: Puffin *Fratercula arctica*** Vision for feature 6 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ During the breeding season the population of puffins will be at least 9,500 pairs within the SPA, (this represents at least 1.1% of the current breeding population) ▪ Breeding success will be 0.7 chicks/pair ▪ The factors affecting the feature are under control Performance indicators for Feature 6 (see performance indicators for feature 1)

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	Conservation Objective for Feature 7: Assemblage qualification: A seabird assemblage of international importance. Vision for feature 7 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Each of the component species of the seabird assemblage will be in favourable condition for the assemblage as a whole to achieve Favourable Condition ▪ During the breeding season the SPA will regularly support at least 67,000 individual seabirds of the following species, most of which also qualify independently as SPA features: ▪ Razorbill Alca torda ▪ Guillemot Uria aalge ▪ Kittiwake Rissa tridactyla ▪ Puffin Fratercula arctica ▪ Lesser black-backed gull Larus fuscus ▪ Manx shearwater Puffinus puffinus ▪ Storm petrel Hydrobates pelagicus Performance indicators for Feature 7 (see performance indicators for feature 1)
Component SSSIs	▪ Skokholm SSSI (Management units 1 - 4)

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	▪ Skomer Island and Middleholm SSSI (Management units 5 - 10) The site has been divided into 10 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Lack of Disturbance** - during the breeding season is extremely important. ▪ **Prey availability** - Food availability during the breeding season, in the wintering quarters, and on passage to and from them, is of vital significance. Food availability during the breeding season will partially determine productivity. ▪ **Predators** - The continued absence of mammalian land predators is fundamental. ▪ **Rabbit grazing** - maintenance of rabbit grazing and areas of bare earth, particularly amongst the coastal grassland is important on Skomer.
SAC Condition Assessment	**Conservation Status of Feature 1: Chough *Pyrrhocorax pyrrhocorax*** Breeding success has been within limits in recent years. The population is considered **FAVOURABLE MAINTAINED**. **Conservation Status of Feature 2: Short-eared owl *Asio flammeus*** For the last 5 years, no more than 4 pairs have bred. At present, the population is considered **UNFAVOURABLE**.

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	Conservation Status of Feature 3: Storm petrel *Hydrobates pelagicus* The feature appears to be within limits for Skomer, but Skokholm is not. This may be because the monitoring methods used on Skokholm have not been entirely successful. It is therefore for the moment considered **UNFAVOURABLE** unclassified. **Conservation Status of Feature 4: Lesser black-backed gull *Larus fuscus*** Its status is considered **UNFAVOURABLE** no change, since the lower limits set for breeding success have not been met on Skokholm. **Conservation Status of Feature 5: Manx shearwater *Puffinus puffinus*** Recent survival rates and breeding success on both Skokholm and Skomer have been within limits. The condition of the population is **FAVOURABLE MAINTAINED**. **Conservation Status of Feature 6: Puffin *Fratercula arctica*** Recent survival rates and productivity has been average to high and all within limits. Although the population is now lower than at times in the past it is considered **FAVOURABLE MAINTAINED**. **Conservation Status of Feature 7: Assemblage qualification: A seabird assemblage of international importance.**

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
	The condition of the seabird assemblage is **UNFAVOURABLE** unclassified since both storm petrel and lesser black-backed gulls are considered to be in Unfavourable condition, as reported above.
Vulnerabilities (includes existing pressures and trends)	▪ **Disturbance** - A key role of island management is to limit human disturbance to breeding birds. The approach of visitors, staff and researchers to nest sites could cause disturbance. Rafting birds at sea are vulnerable to water-borne human disturbance. There should be no unauthorised access away from the footpaths. ▪ **Soil erosion** - The collapse of scree etc by visitors, staff and researchers away from the footpaths could cause damage to the breeding habitat (and be dangerous). Natural processes could damage but also create breeding habitat. ▪ **Pollution** - An oil pollution incident during the breeding season could have a great impact on populations. ▪ **External factors** - The populations use the island as a breeding site. They are subject to many external influences during and outside this period.
Landowner/ Management Responsibility	▪ Skomer Island is owned by the Countryside Council for Wales (CCW) and leased to the Wildlife Trust, South and West Wales (WTSWW). The foreshore around both Skomer and Middleholm is leased to CCW from the Crown Estate. ▪ Middleholm is owned by the National Trust. ▪ Skokholm Island is owned mainly by the WTSWW, except for a small area around the lighthouse that is owned by Trinity house Lighthouse Service.

Site Name: **Skokholm and Skomer** **Location (Lat & Long):** **51 44 10 N** **05 17 27 W** **JNCC Site Code: UK9014051** **Size (ha): 427.71** **Designation: SPA**	**Habitats Regulations Assessment: Data Proforma**
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from infrastructure (water abstraction and pollution) as a result of the WSPU.

Special Areas of Conservation (outside plan area)

Site Name: **Carmarthen Bay Dunes** **Location Grid Ref: SN285074** **JNCC Site Code: UK0020019** **Size (ha): 1,206.32** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Carmarthen Bay Dunes SAC is located in three sections: ▪ Laugharne and Pendine on the Carmarthenshire coast to the south of St Clears ▪ Around Pembrey on the Carmarthenshire coast south west of Kidwelly ▪ Whiteford on the north west of the Gower peninsular The SAC is largely comprised of sand dune and associated habitat. Laugharne and Pendine Burrows SSSI comprises the largest spit and sand dune system in west Wales, lying on the west side of Carmarthen Bay.
Qualifying Features	**Annex I habitats primary reason for selection:** ▪ Embryonic shifting dunes ▪ Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`) ▪ Fixed dunes with herbaceous vegetation (`grey dunes`)*Priority feature ▪ Dunes with *Salix repens* ssp. *argentea* (*Salicion arenariae*) ▪ Humid dune slacks **Annex II species primary reason for selection:** ▪ Narrow-mouthed whorl snail *Vertigo angustior* ▪ Petalwort *Petalophyllum ralfsii* ▪ Fen orchid *Liparis loeselii*
Conservation Objectives	**Conservation Objective for Feature 1: Embryonic shifting dunes**

Site Name: Carmarthen Bay Dunes Location Grid Ref: SN285074 JNCC Site Code: UK0020019 Size (ha): 1,206.32 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Vision for Feature 1 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Natural processes will be allowed to determine the time and place when the strandline and embryonic dunes exist. These processes will not be impeded by direct or indirect human intervention ▪ A strandline will be present at least one year in every five within the areas identified ▪ Embryonic dunes will be present on the seaward side of the mobile frontal dune ridge at least one year in every three ▪ All of the factors affecting the feature are under control Performance Indicators for Feature 1 The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Carmarthen Bay Dunes SAC Management Plan. **Conservation Objective for Feature 2: Shifting dunes along the shoreline with *Ammophila arenaria* (`white dunes`)** Vision for Feature 2 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

Site Name: Carmarthen Bay Dunes Location Grid Ref: SN285074 JNCC Site Code: UK0020019 Size (ha): 1,206.32 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Shifting dunes will exist as part of the dynamic natural processes which create the dune systems. ▪ There will be an interaction between the three dune systems such that the natural process of erosion in some parts and accretion in others will continue without direct or indirect human disturbance. ▪ Shifting dunes will comprise a significant part of the dune system but will increase and decrease in extent and location as natural processes determine the landscape of the dune systems ▪ At least two of the three sites in the SAC satisfy the limits outlined in the performance indicator below. ▪ All of the factors affecting the feature are under control. Performance Indicators for Feature 2 (see performance indicators for feature 1) **Conservation Objective for Features 3: Fixed dunes with herbaceous vegetation (`grey dunes`)** Vision for Feature 3 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Fixed dunes with herbaceous vegetation (grey dunes) will occur where older, shifting dunes become more stabilised and in early successional stages become colonised by lichens and other species indicative of the transition from less mobile habitat. ▪ The habitat will encompass a range of successional stages throughout the area, determined by patterns of natural factors and grazing. ▪ Grey dunes will comprise a significant part of the dune system but will increase and decrease in extent and location as natural processes determine the landscape of the dune systems

Site Name: Carmarthen Bay Dunes Location Grid Ref: SN285074 JNCC Site Code: UK0020019 Size (ha): 1,206.32 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ All factors are under management control. Performance Indicators for Feature 3 (see performance indicators for feature 1) **Conservation Objective for Features 4 & 5: Dunes with *Salix repens ssp. argentea* (*Salicion arenariae*) and Humid dune slacks** The division between 'humid dunes' and 'dunes with Salix repens ssp. argentea is unclear and difficult to define. The humid dune slack habitat includes both successionally young and mature slacks which equate to NVC communities SD13-16. The dunes with Salix repens spp. argentea equate to drier areas of mature dune slack and the low hummocks found around dune slacks which support Salix repens. These are sometimes known as hedgehog dunes. Because of the difficulties in separating these two habitats, for the purposes of monitoring, these features are considered together. Vision for Features 4 & 5 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Dunes with Salix repens and humid dune slacks will occur as part of the dune system, their location will be determined by natural processes and appropriate grazing management ▪ A range of successional stages will be found in both features ▪ Factors affecting the features will be under control Performance Indicators for Features 4 and 5 (see performance indicators for feature 1)

Site Name: Carmarthen Bay Dunes Location Grid Ref: SN285074 JNCC Site Code: UK0020019 Size (ha): 1,206.32 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	Conservation Objective for Feature 6: Narrow-mouthed whorl snail *Vertigo angustior* Vision for Feature 6 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Sufficient suitable habitat is present to support the populations ▪ The factors affecting the feature are under control Performance Indicators for Feature 6 (see performance indicators for feature 1) **Conservation Objective for Feature 7: Petalwort *Petalophyllum ralfsii*** Vision for Feature 7 ▪ *Petalophyllum ralfsii* will continue to be found at its current locations in each of the three SSSI within the SAC. The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The species will be found where conditions are suitable in sufficient numbers to form a viable and sustainable population ▪ The population will vary from year to year depending on conditions, especially in drier years, but the long term population will remain steady and sustainable ▪ Suitable dune slacks will have patches of bare ground that is being colonised by jelly lichens (Collema spp.) and Barbula mosses.

Site Name: **Carmarthen Bay Dunes** **Location Grid Ref: SN285074** **JNCC Site Code: UK0020019** **Size (ha): 1,206.32** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	▪ The factors affecting the feature are under control Performance Indicators for Feature 7 (see performance indicators for feature 1) **Conservation Objective for Feature 8: Fen orchid *Liparis loeselii*** Vision for Feature 8 The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ Sufficient suitable habitat is present to support the populations ▪ The factors affecting the feature are under control Performance Indicators for Feature 8 (see performance indicators for feature 1)
Component SSSIs	Whiteford Burrows, Landimore Marsh and Broughton Bay SSSI (Management units 1 - 5) Pembrey Coast SSSI (Management units 6 - 10) Laugharne and Pendine Burrows SSSI (Management units 11 - 15) The site has been divided into 15 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Management Requirements of Embryonic Shifting Dunes** o The continued supply of new sand from the beach into the dune system is therefore vital to the

Site Name: Carmarthen Bay Dunes Location Grid Ref: SN285074 JNCC Site Code: UK0020019 Size (ha): 1,206.32 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	continued existence of this community, even if this sand is derived from within the same system. The habitat type is of exceptional importance as an indicator of the general structural and functional 'health' of a dune system. Creation of new dune habitat, and indeed the long-term survival of the dune system is often dependent upon the survival of this habitat type. o Management requirements are to ensure that human activities both on and off shore do not interfere with the presence of the feature, this may require control over dredging and sand winning operations and prevention of vehicular access along the dune front. o This feature falls within the non-intervention management areas ▪ **Management Requirements of Shifting dunes** o Shifting dunes occur along the shoreline occupying a band inland of and running adjacent to the embryo dunes. The extent of such habitat will vary according to the overall mobility/ stability of the site, being very narrow/ absent from stable sites or, alternatively, accounting for a significant proportion of more mobile sites. Shifting dunes are maintained only by the constant movement or accretion of bare sand, bound together by marram grass and similar pioneer grass species. o This community is largely self-perpetuating - ie. it will be retained (albeit restricted in extent) in most areas irrespective of management. In the Laugharne and Pendine section there is some scrub encroachment into the dunes and some active management will be required periodically to remove this. Monitoring is limited to recording the presence of the shifting dune communities that the site is known to support. o This area falls within the non-intervention areas, the only management required other than that noted above for this feature is to ensure no beach cleaning activities are carried out. ▪ **Management Requirements of Fixed dunes with herbaceous vegetation** o Active management in the form of livestock grazing, preceded by mechanical excavation or scarification where appropriate, is required to reverse this trend and thereafter maintain (at least a

Site Name: Carmarthen Bay Dunes Location Grid Ref: SN285074 JNCC Site Code: UK0020019 Size (ha): 1,206.32 Designation: SAC	Habitats Regulations Assessment: Data Proforma

proportion of) the herbaceous dune vegetation in a more open, early successional and mobile form.
- In the Laugharne and Pendine SSSI and part of the Pembrey SSSI, management is complicated by the fact that it is Ministry of Defence training area and there is unexploded ordnance present.
- This feature falls within the active management areas, except any areas where it is deemed scrub development has progressed too far.

- **Management Requirements of Dunes with *Salix repens ssp. argentea* (*Salicion arenariae*) and Humid dune slacks**

  - Management issues for this feature are the lack of creation of new dune slacks, dune stabilisation and succession of older slacks to scrub in some areas, though this is variable over the SAC and more recently at Whiteford concern has been overgrazing. Additionally establishment of *Hippophae rhamnoides* sea buckthorn, impacts on hydrology from conifer plantations, issues of the impact of military use and loss of populations of fen orchid which the slacks support are management factors which must be addressed.
  - Scrub clearance and where necessary follow up grazing is required, particularly targeted at areas where sea buckthorn has established. In order to achieve some mobility of sand dunes and prevent over-stabilisation, blow-outs may be considered as a short term management option.
  - Conifer plantations have an impact on the hydrology of dune systems and the long term aim must be for their removal where SAC features are affected. The potential impact of conifer removal in terms of changes to geomorphological processes needs to be addressed, where necessary research is required to determine the likely impact.
  - The training activities carried out by the MoD mean that conservation management activities are likely to remain restricted to some extent for the foreseeable future.
  - These features fall within the active management areas, except any areas where it is deemed scrub development has progressed too far.

- **Management Requirements of Narrow-mouthed whorl snail *Vertigo angustior***

Site Name: Carmarthen Bay Dunes Location Grid Ref: SN285074 JNCC Site Code: UK0020019 Size (ha): 1,206.32 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	○ Future management of the dune system, in particular any changes to the grazing regime, especially fencing, could impact on the snail's population due to impacts on the transition zone which is important habitat for the species. ▪ **Management Requirements of Petalwort *Petalophyllum ralfsii*** ○ Management of Petalophyllum is entirely dependant on the presence of the required habitat, early successional dune slacks. Therefore for management requirements of the species, refer to Humid dune slacks. ▪ **Management Requirements of Fen orchid *Liparis loeselii*** ○ Management of Liparis is entirely dependant on the presence of the required habitat, early successional dune slacks. Therefore for management requirements of the species, refer to Humid dune slacks.
SAC Condition Assessment	**Conservation Status of Embryonic Shifting Dunes** The embryonic shifting dunes of the Carmarthen Dunes SAC are considered to be in **favourable** conservation status. **Conservation Status of Shifting dunes** The shifting dunes along the shoreline of the Carmarthen Dunes SAC are considered to be in **favourable** condition. **Conservation Status of Fixed dunes with herbaceous vegetation**

Site Name: Carmarthen Bay Dunes Location Grid Ref: SN285074 JNCC Site Code: UK0020019 Size (ha): 1,206.32 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	The fixed dunes with herbaceous vegetation of Carmarthen Dunes SAC is considered to be in **Unfavourable declining** conservation status. This is due primarily to undergrazing and scrub development. **Conservation Status of Dunes with Salix repens ssp. Argentea (Salicion arenariae)** These two features have been considered together as the issues and management of both are intimately linked. The dunes with *Salix repens ssp.Argentea* of Carmarthen Dunes SAC are considered to be in **unfavourable declining** conservation status. Dune slacks at Laugharne and Pembrey and at Pendine were assessed as unfavourable based on the visual assessment and the site manager's knowledge. **Conservation Status of *Vertigo angustior*** The narrow-mouthed whorl snail Vertigo angustior of Carmarthen Bay Dunes is considered to be in **unfavourable declining** conservation status (June 2006). The habitat in every section is unfavourable. As both the habitat condition and the presence and distribution of the snail have to be favourable for the feature overall to be considered favourable. As this is not the case, the feature is at present in Unfavourable declining conservation status. **Conservation Status of *Petalophyllum ralfsii*** The *Petalophyllum ralfsii* of Carmarthen Dunes SAC is considered to be in **unfavourable declining** conservation status (April 2003). The feature is considered to be unfavourable largely because of the lack of suitable habitat at the site. **Conservation Status of Fen orchid *Liparis loeselii***

Site Name: **Carmarthen Bay Dunes** **Location Grid Ref: SN285074** **JNCC Site Code: UK0020019** **Size (ha): 1,206.32** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
	The *Liparis loeselii* of the Limestone Coast of South West Wales SAC is considered to be in **unfavourable declining** conservation status (August 2002). The status is based on the most recent monitoring report for the feature, which shows that the number of plants and the number of slacks within which it occurs have decreased dramatically, particularly over the last ten years.
Vulnerabilities (includes existing pressures and trends)	▪ **Inappropriate Grazing** - In some areas of the SAC there is a lack of grazing which has lead to the development of tall, rank grassland, leading in turn to scrub development and in some parts invasion by sea buckthorn. This leads to stabilisation and soil development, so causing loss of the special interest of the habitat. Where overgrazing of slacks has occurred, this has threatened the already declining population of fen orchid and a holding pattern of management is currently in place to attempt to maintain the population until the grazing pattern can be brought under control. ▪ **Invasive Species** - Substantial areas of open dunes are threatened by *Hippophae* encroachment, while the damp slacks are similarly under pressure from *Salix repens*; these threats are detrimental to species of early successional stages such as *Liparis loeselii* and *Petalophyllum ralfsii*.
Landowner/ Management Responsibility	N/A
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans have the potential to give rise to adverse effects at this site. ▪ The AA states that it is not possible to predict in specific terms whether the WSPU would or would not give rise to significant adverse effects either alone or in combination with other plans/ strategies and projects upon specific European sites. However, it does identify that this site is likely to come under increasing risk of adverse effects from recreation and tourism as a result of the WSPU.

Site Name: **Carmarthen Bay Dunes** **Location Grid Ref: SN285074** **JNCC Site Code: UK0020019** **Size (ha): 1,206.32** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**

Site Name: Yerbeston Tops **Location Grid Ref: SN057099** **JNCC Site Code: UK0030305** **Size (ha): 18.81** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Site Description	Yerbeston Moors consists of 11 areas of wet, rough land which are known locally as 'moors'. They are scattered around Martletwy, Lawrenny, Yerbeston and Templeton, to the east of the Milford Haven estuary in south Pembrokeshire. The moors overlie coal measures, and are mostly on poorly drained soil on valley slopes and bottoms. This site hosts an isolated meta population of over 1500 adult marsh fritillary butterfly and is an important outlier for the conservation of the species in west Wales.
Qualifying Features	**Annex I habitats qualifying feature:** ▪ *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) **Annex II species primary reason for selection:** ▪ Marsh fritillary butterfly *Euphydryas* (*Eurodryas*, *Hypodryas*) *aurinia*
Conservation Objectives	**Conservation Objective for Feature 1: *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*)** Vision for Molinia meadows The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ *Molinia* meadows will cover at least 4ha ▪ The following plants will be common in the *Molinia* meadows: purple moor-grass *Molinia caerulea*; small sedges including *Carex pulicaris* and *hostiana*, and devil's bit *scabious Succisa pratensis*. ▪ Soft rush *Juncus effusus* and species indicative of agricultural modification, such as perennial rye grass

Site Name: Yerbeston Tops Location Grid Ref: SN057099 JNCC Site Code: UK0030305 Size (ha): 18.81 Designation: SAC	Habitats Regulations Assessment: Data Proforma

Lolium perenne and white clover *Trifolium repens* will be largely absent from the *Molinia* meadows.

- Scrub species such as willow Salix and birch *Betula* will also be largely absent from the *Molinia* meadows
- All factors affecting the achievement of these conditions will be under control.

Performance indicators for *Molinia* meadows

The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Yerbeston Tops SAC Management Plan.

Conservation Objective for Feature 2: Marsh Fritillary

Vision for Marsh Fritillary

The vision for the marsh fritillary is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- Density of larval webs during sampling is at least 200 per hectare of optimal breeding habitat
- There are at least 10ha of Good Condition (optimal breeding) habitat on or within 2 km radii the SSSI
- There are at least 50ha of Suitable Condition habitat on or within 2km radii of the SSSI
- Optimal breeding habitat comprises grassland, with *Molinia* abundant, where the vegetation height is within the range of 10 to 20 cm, and where, for at least 80% of sampling points, *Succisa pratensis* is present within a 1 m radius. Scrub (>1 metre tall) covers no more than 10% of area.
- The factors influencing the breeding habitat are under control.
- Trees, bracken, scrub and saplings are of no more than scattered occurrence within the marshy grassland.
- A range of characteristic wetland plants and insects are present.

Site Name: Yerbeston Tops Location Grid Ref: SN057099 JNCC Site Code: UK0030305 Size (ha): 18.81 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	▪ Species indicating agricultural improvement are rare or absent. Performance indicators for Marsh fritillary butterfly The performance indicators are part of the conservation objective, not a substitute for it. Assessment of plans and projects must be based on the entire conservation objective, not just the performance indicators. The performance indicators can be found within the Yerbeston Tops SAC Management Plan.
Component SSSIs	Yerbeston Moors SSSI The site has been divided into 3 management units. A map of the management units can be viewed on the CCW website.
Key Environmental Conditions (factors that maintain site integrity	▪ **Livestock grazing** - The Molinia Meadows has been maintained through traditional farming practices. Without an appropriate grazing regime, the grassland would become rank and eventually turn to scrub and woodland. Light grazing by cattle or ponies between April and November each year is essential for maintaining the marshy grassland communities. ▪ **Scrub Cutting** - A key attribute, as grazing levels required to keep sward structure suitable for marsh fritillaries may be too low to prevent scrub encroachment. Bracken currently absent from the feature. ▪ **Water Quality** - The habitat may be in part groundwater dependent. ▪ **Water Quantity** - The marshy grassland communities are strongly influenced by the quantity and base status of the groundwater. Reductions in the quality and quantity of the water in the springs and watercourses feeding the site may lead to a loss of marshy grassland or changes in species composition. Conversely reduced/ impeded drainage may lead to ground-water stagnation and a different change in species-

Site Name: Yerbeston Tops Location Grid Ref: SN057099 JNCC Site Code: UK0030305 Size (ha): 18.81 Designation: SAC	Habitats Regulations Assessment: Data Proforma
	composition, e.g. increased abundance of rushes.
SAC Condition Assessment	**Conservation Status of *Molinia* Meadows** 2005: **Unfavourable recove**ring Poor condition status is due to excessively tall swards, with presence of young scrub also a common reason for point failure. **Conservation Status of Marsh Fritillary** 2005: **Unfavourable** Across the meta-population as a whole, there was only 15.3ha of suitable habitat available, with a mere 6.5ha classed as 'good condition'. This is short of the suggested minimum of 50 ha of suitable habitat (including 10 ha of Good Condition habitat) that is needed to support a viable population into the long-term.
Vulnerabilities (includes existing pressures and trends)	▪ **Burning** - can damage the bryophyte layer and encourage a vigorous re-growth of purple moor-grass and other fire-resistant species. ▪ **Water Quality** - Groundwater could be subject to pollution from agricultural activities such as fertiliser application. The habitat could also be affected by airborne pollutants such as nitrous oxides from vehicle exhausts. ▪ **Water Quantity** - The habitat could be affected by any changes to groundwater flows or surface drainage works - for example due to abstraction from boreholes.

Site Name: Yerbeston Tops **Location Grid Ref: SN057099** **JNCC Site Code: UK0030305** **Size (ha): 18.81** **Designation: SAC**	**Habitats Regulations Assessment: Data Proforma**
Landowner/ Management Responsibility	Multiple ownership, including conservation organisations.
HRA/AA Studies undertaken that address this site	HRA & AA of the Wales Spatial Plan Update June 2008. http://wales.gov.uk/about/strategy/spatial/hra/download/?lang=en ▪ The HRA Screening concludes that the WSPU and other plans are unlikely to give rise to significant adverse effects at this site.