

# Stroud District Council

## Strategy for Avoidance of Likely Significant Adverse Effects on the Severn Estuary SAC, SPA and Ramsar Site

December 2017



## **Acknowledgements**

Staff at SDC wishes to thank Alisa Swanson Hayley Fleming and Katie Clarke of Natural England for facilitating this work and evidence gathering. We welcome the recommendations and motivation of Karen Colebourn and her staff at EPR involved in the evidence gathering process.

We are especially grateful for the input provided by the WeBS counters representatives Mike Smart (BTO), Eric Palmer (Link Ecology) and Emma Hutchins of the Wetlands and Wildfowl Trust..

We welcomed the help, assistance and support from Lucy Taylor on behalf of the Members of ASERA and the Severn Estuary Partnership. We particularly thank Rose Hewlett and Roger Godwin of the Gloucestershire Severn Estuary Stakeholders Group and the Parishes of Slimbridge and Frampton for all their input.

Permission for access to private land provided by Rollo Clifford Frampton Court Estate, and Roland Brown Berkeley Castle Estate and officers of the Environment Agency,

Thanks must also go to Gary Kennison of Gloucestershire County Council & the assistance of Dr C Studholme representing the Local Nature Partnership & Gloucestershire Wildlife Trust.

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View to Frampton Church from the Warth

# 1. Summary

- 1.1 This report sets out a strategy to resolve disturbance issues to wintering birds on the Upper Severn Estuary. The report focuses on the European Protected Site within Stroud District (Severn Estuary SAC/ SPA/Ramsar Site) and its internationally important bird interest features.
- 1.2 Stroud District Council is working with Natural England, Wildfowl and Wetlands Trust Severn Estuary Partnership, ASERA and Severn Estuary Stakeholders to develop an evidence base and better understanding of recreational pressure along 22km of the Severn Estuary SAC/SPA/Ramsar site within the District. This information has been used to develop appropriate mitigation proposals. Studies from partnership organisations show marked declines and changes of some key bird species. There is currently insufficient evidence to adequately assess the cause of these declines. Disturbance is one potential factor, and studies have shown recreational activities to cause disturbance impacts to birds. Nine access points to the Estuary were identified and in 2015/16 visitor questionnaires were undertaken by Consultants Ecological Planning and Research (EPR). This identified that whilst baseline recreational pressure is low, it is likely to increase as new housing, employment and tourism development comes forward. A likely significant effect on the conservation status of the SPA's qualifying features could not be ruled out and hence the Council has been developing a mitigation strategy accompanied with further evidence working with Natural England.
- 1.3 New residential development will further exacerbate the recreational pressures. New development proposed for Stroud District (at least 11, 400 dwellings are set out in the current Stroud District Local Plan (2015)) brings more people to the local area and access levels have been predicted to increase on the coastal sites. Research in the UK has shown coastal site pressure is likely to increase on average by around 16% over the next 10 years. Such an increase will probably be gradual and long-term, across a wide stretch of estuarine coast; solutions are required to ensure that future development in the District does not have an adverse effect on the integrity of the European site.
- 1.4 This strategy addresses disturbance impacts and provides a solution to issues relating to disturbance. The Strategy has two broad aims.
  - To support sustainable growth whilst protecting the integrity of European wildlife sites from impacts relating to recreational disturbance
  - To reduce the existing recorded recreation impact on birds on the European wildlife sites in order to meet duties relating to the maintenance and restoration of European sites, as required by Article 4(4) of the Birds Directive.

1.5 Elements within the Severn Estuary Recreation & Management Strategy (SE RaMS) include:

- Educate and engage with local dog walkers to promote particular less sensitive sites or routes to dog walkers and raise awareness of disturbance issues.
- Explore potential warden use and a visitor engagement role deployed across a range of locations, targeting areas with particular issues or close to new development.
- Explore new access Infrastructure through a range of discrete, focussed projects that could be phased with new development.
- Explore and review parking locations with landowners, communities and developers. Any changes can be phased over time and linked to available funding and locations where new development comes forward.
- Introduce Codes of Conduct (with ASERA/SEP), raising awareness of estuarine issues and providing guidance across a range of activities. In-line with these, working with local clubs/groups is envisaged.
- Create 'quiet' refuge areas within the upper Severn Estuary where recreation and other activities are discouraged.
- Introduce interpretation/signage targeted on areas of most concern.
- Advise, educate and work with landowners to improve land management practices which can increase the suitability and/or capacity of habitat.
- Advise and work with landowners to create new habitat and alternative recreational areas.
- Continue to monitor levels of usage. As with the Rodborough Common Mitigation Strategy, this is needed to address any implementation issues and to adjust this Strategy if necessary.
- Enhance existing sites to create managed hubs –Slimbridge, Purton, Saul for example. In the long term, access is best focussed away from the SPAs or in particular honey pots around the shore where it can be managed and engagement with visitors targeted. The Wetland & Wildfowl Trust, Slimbridge already draws high numbers of visitors and through careful site management and education contributes to the reduction of disturbance potential elsewhere.
- Create new wildfowl feeding and roosting habitat in appropriate locations with the reintroduction of salt water marsh, scrapes and new or better management regimes.

1.6 The strategy therefore contains elements that can be initiated quickly and other elements that can be phased over time and are flexible. Based on the results of engagement with stakeholders including some site visits, the Council has set out here specific costed and deliverable projects which have been agreed and will be delivered via financial contributions from future development. There is therefore an overall broad cost for the strategy.

1.7 The costs are set out below (Table 1). While only indicative the costings provide the opportunity to budget and source funding. In the longer term different elements of the strategy may change in emphasis and costs may need to be distributed differently.

- 1.8 The implementation of the Strategy will be delivered by the Council in consultation with key stakeholders. This model already exists for Rodborough Common SAC where a Conservation Panel meet quarterly to discuss the phasing and spending aspects of that mitigation fund for the identified projects within that agreed Strategy. This approach using stakeholders which includes the landowner, Natural England, local Wildlife and Conservation Groups and the Graziers has proved successful in securing agreed implementation of those identified projects. It is envisaged that the Severn Estuary project costs and the calculation of necessary financial contributions should be reviewed on an annual basis. The Strategy approach anticipates financial contributions from small sites largely as large sites have potential to deliver on-site mitigation packages. The applicant will need to demonstrate how they will comply with the 'Appropriate Assessment' (AA) where a plan or project is likely to have a significant impact on a Natura 2000 site. Natura 2000 sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). The level of the contribution proposed here is provided by the total cost of projects / number of dwellings expected in the 7.7km Catchment Zone in the remaining current Local Plan period 2018-2031. This calculation demonstrated later in the Strategy as £690,854 divided by 1795. The financial contribution per new net dwelling will be £385. Therefore, those applications that are currently waiting to be determined will be offered the opportunity to make off site S106 contributions. These will be 'banked' by SDC and may be drawn down to facilitate implementation of the projects set out in this Strategy.
- 1.9 The Strategy will be reassessed as part of the development of environmental policies and the growth strategy included within the review of the Local Plan, which is planned to be in place by 2022.
- 1.10 It is anticipated that Local Planning Authorities along the Severn Estuary will in the future work together to secure funding and mitigation at a landscape scale comparable with the Steart Peninsula for example. Nevertheless, promoters of residential development will be expected to contribute to mitigation measures necessary to make their schemes acceptable. Other work associated with the strategy, for example, further baseline studies and surveys to develop a greater understanding of recreational activity and pressure will be funded directly by the District Council, Natural England and/or other delivery partners.



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**Table 1: Summary of all the project elements of the strategy.**

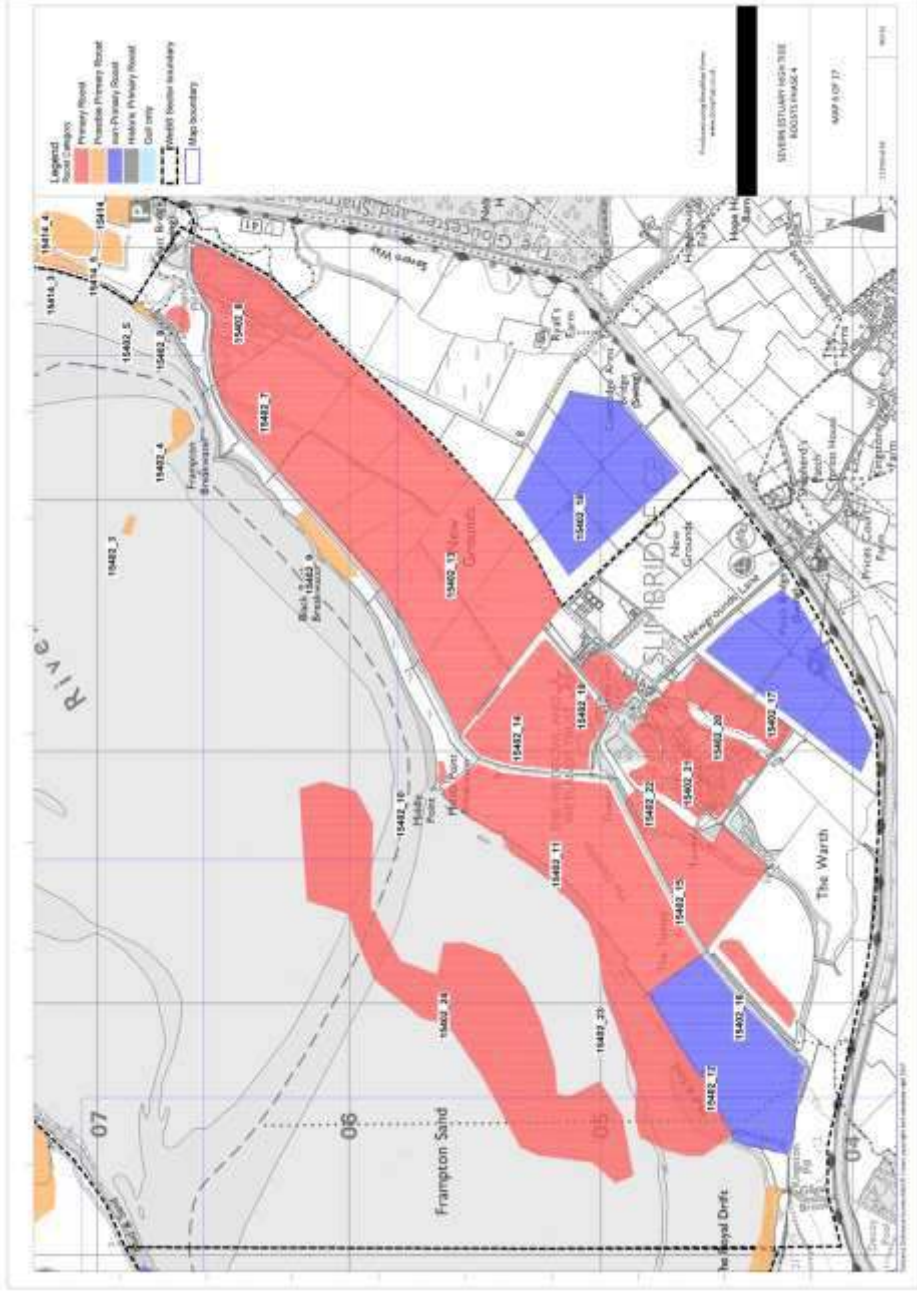
Note: Costs are drawn from examples elsewhere, but are not based on actual final quotes. Total costs are given at the end of the table.

Recommendation	Set-up/Capital Cost	Annual Cost	Notes	Priority
<b>1.SLIMBRIDGE PROJECTS</b> Enhancement of Slimbridge to create hub where access closely controlled. (Projects can be whole or part funded as money also available as match from WWT and Heritage Lottery Fund).			Slimbridge is regarded as one of the honey pot sites within Stroud Districts offering access to the estuary. The WWT reserve is a key site for attracting and controlling significant numbers of visits to the estuary. The work proposed under this project will help manage access during the critical passage season for the SPA wintering bird assemblage. Six roosts of significant interest species assemblages have been identified here in habitats comprising unimproved grassland, pasture and arable fields, sandflats and pools amongst others. This will help relieve any pressure on the quieter refuge areas that support the bulk of the passage assemblage. Visitors will be encouraged to return to Slimbridge for it's fantastic wintering bird experiences too, relieving pressure on wintering birds elsewhere, while not disturbing them at Slimbridge because of the provision of suitable infrastructure. Some of the work will also contribute to better habitat for SPA bird species.	
Create a surfaced summer walk to interpret the Estuary and provide access.	£25,000		Improvements to the summer walk way for visitors and members. This track allows people to walk out to the estuary but will be improved to make it "an access for all" route suitable for wheel chairs and pushchairs etc. Spring and autumn passage birds will benefit from encouraging access in this controlled manner.	
Enhanced wildlife corridors to compliment summer walk.	£10,000		Habitat improvements along the summer walk to improve the visitor experience and add to the attractiveness of Slimbridge as a place to get out onto the estuary. In addition it will provide goose and swan grazing opportunities and habitats for wintering waders.	
Shepard's Hut Hide established on the edge of the estuary to provide a hide.	£28,000		Should attract keen bird watchers and general members of the public too. Provides a chance to explain why sensitive access to the estuary is so	



					important, especially in the winter and is a chance to attract visitors back to the site at other times of the year, reducing access and impacts on less protected areas of the estuary and the SPA features.	
Improved access for Land Rover safari's	£15,000				Drove road access corridor to allow guided Land Rover safari's with a public trailer. Raised track will create better access in poor weather conditions. Smaller loop decrease the time required to provide varied experience thereby allowing additional participants.	
Improvements to Ox Piece and Goose House Ground habitat corridor to attract more visitors but also provide additional and better quality habitat for wintering birds	£7,000				Project is paired with drove road above as habitat corridor creation will provide materials for the construction. The habitat will support a range of species including those that contribute to the SPA wintering assemblage e.g. curlew, redshank, shelduck and teal	
<b>Habitat enhancements primarily targeted at improving conditions and available habitat for wintering birds.</b>					Slimbridge is one of the largest areas no public access for the whole SPA. The work proposed under this project will maintain, improve and increase the capacity of the reserve to support a diverse range of SPA bird species such as European white-fronted geese, Bewick's swan, shoveler, and wigeon.	
Turkey Oak removal	£15,000 (With some of the labour provided free as a training opportunity. Timber should also be saleable.)		Probably a 3-5 year removal programme.		Removal of non-native planted trees to improve habitat for wintering birds, increasing the area of suitable grazing away from edge effects and removing tree line that creates further edge effects. Significant increase to the improved grazing pasture favoured by the European white-fronted geese and Bewick swans.	1
Goose pasture paleo channel enhancement	£7-9,000 per area (7 areas in total) Total £56000)		£32 per/m		Diversification if the fields used by the wintering birds will provide additional feeding opportunities and improved habitat for the SPA assemblage.	1
Northern Bund and corridor through Bull Ground	£5,000				Enhances ability to control water and provide higher drier access areas to for cattle management /grazier access. Management of grazing livestock is critical for maintaining suitable conditions for wintering birds.	1
Modifying the sward in the Bull Ground to produce herb rich pasture to provide additional suitable goose grazing.	£6,000				Turf striping and reseeding.	
Cattle handling facilities Cattle numbers, timing of grazing and availability of manure are key to					Cattle handling facilities Cattle numbers, timing of grazing and availability of manure are key to managing the habitats but have become harder to secure. Improved	

managing the habitats but have become harder to secure. Improved facilities are required to deliver this in the long-term				facilities are required to deliver this in the long-term. This will be kept under review. Therefore a cost not set out here as unquantifiable at this current time. Will be kept under review.	
Additional cattle shed to house 50-70 cows.	£70,000			We need the security of being able to house all the cattle required for effective grazing management on site.	
Provision of manure handling facilities	£10,000			We need to be able to store, move and spread manure effectively. To provide the grass sward desired by the grazing birds within the wintering SPA assemblage.	
Wetland treatment system	£20,000			Sustainably deal with farm run-off water. System will include soft engineered vegetated wetlands and pools. Infrastructure is required to support the housing of cattle and manure. Without which securing suitable grazing and appropriate management for the SPA is problematic.	
Fencing of livestock paddock including internal control structures to enable safe herd management	£7,000			The barns and farm infrastructure need to allow a single farmer to manage his for movements on and off the reserve and routine veterinary procedures. Without which securing suitable grazing and appropriate management for the SPA is problematic.	
	£15,000			Extending the current barn to provide sufficient straw bedding for the increased number of cattle and provide housing for farm machinery. Required to support on-going management of the cattle and other habitat management activities e.g. topping and cutting fields.	
	£10,000			Improving access around the farmyard and between buildings makes grazier acquisition and retention more likely. The farm needs to work as a viable single livestock unit. Without which securing suitable grazing and appropriate management for the SPA is problematic.	
Provision of a car park in Slimbridge village to reduce roadside car parking and verge /ditch damage. Contribute to conservation management and interpretation board provision.	£30,000			Parking issues in the village have been identified and verge and ditch condition has also declined as a consequence. Proposal will seek to control roadside parking and its associated impacts. Adequate mitigation for loss of agricultural land will be secured through any planning permission granted. Appropriate maintenance and management can be secured longer term working with the Parish Council and landowner. This could also be a key site for attracting and controlling significant numbers of visits away from less sensitive parts of the estuary. The focus of a car park provides a chance to explain why sensitive access to the estuary is so important, especially in the winter manage visitors at other times of the year.	

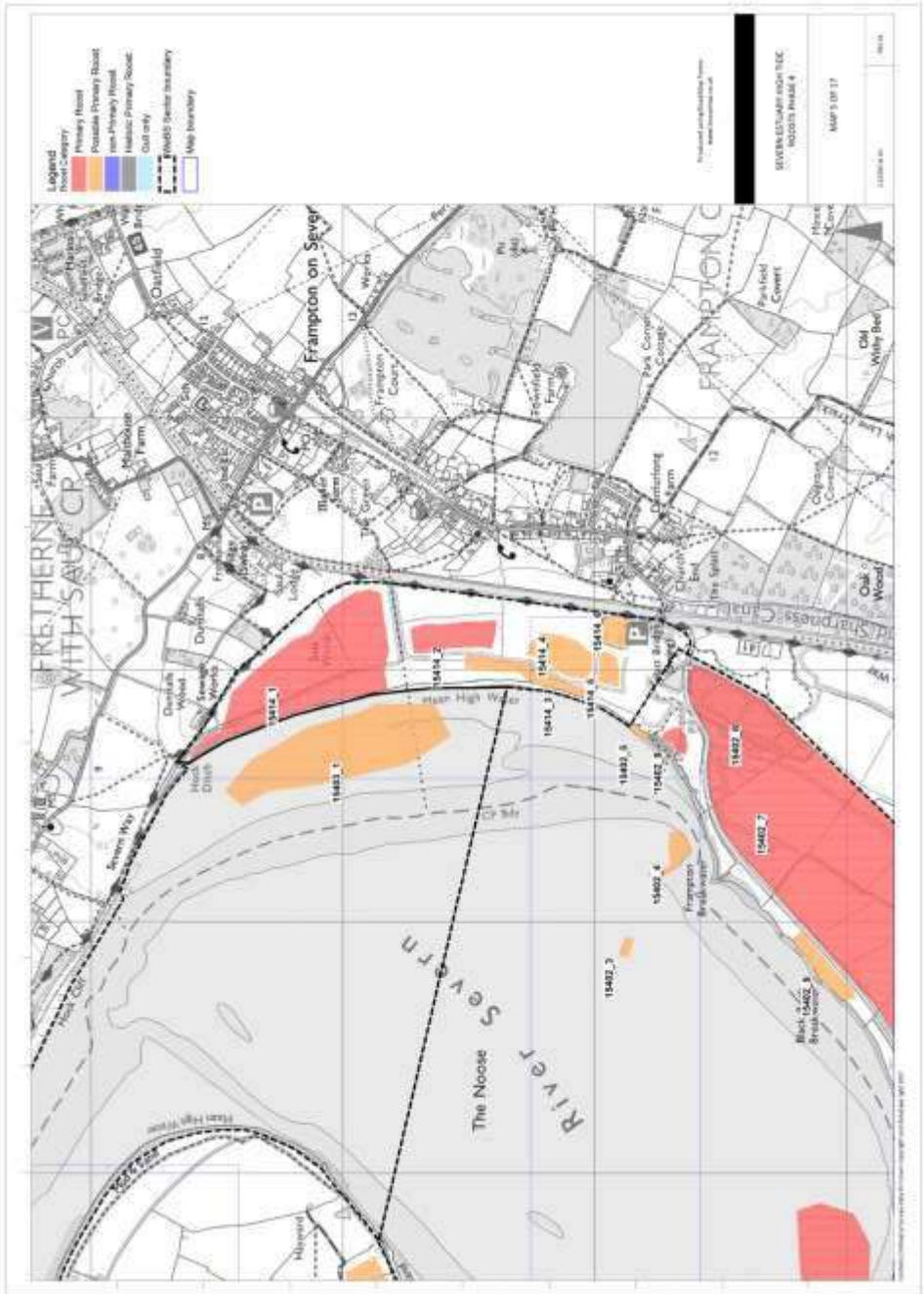


Recommendation	Set-up/Capital Cost	Annual Cost	Notes	Priority
<b>2.FRAMPINGTON &amp; SAUL WARTHS (The Severn Lands)</b>				
			Saul Warth is regarded as one of the 'honeypot' sites within Stroud District offering limited access to the estuary. Both Saul and Frampton Warths	

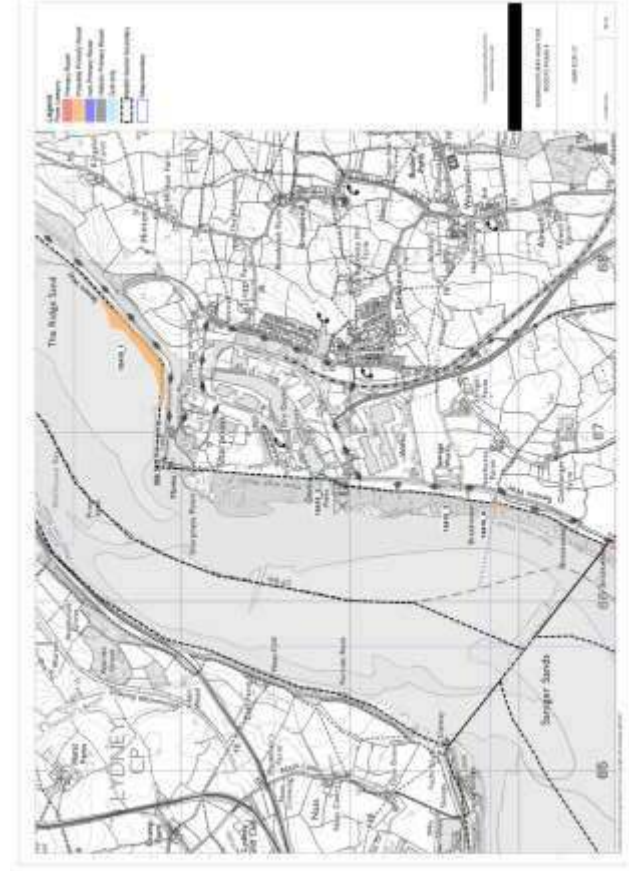
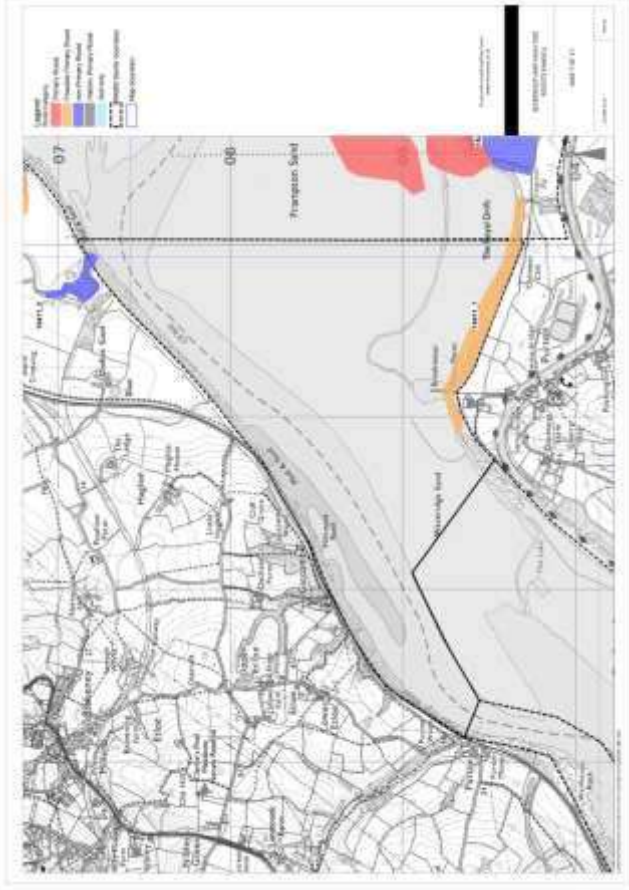
				<p>(known as The Severn Lands) occasionally contain standing shallow water on unimproved or semi-improved grassland. Six roosts of significant interest species including Curlew, Lapwing, Snipe, Gadwall, Grey Plover, Ringed Plover, Whimbrel and Knot. The work proposed under this project will help manage access during the critical passage (autumn and spring) and overwintering season for the SPA bird assemblage. The aim will be to relieve recreational pressure on the quieter refuge at the centre of the marsh. Some of the work will also contribute to better habitat for SPA birds as well as long term protection against erosion. Please refer to map xx at end of the table.</p>	
Reduction in disturbance by dog walkers.	£	£		<p>A short stretch of the Severn Way is the only footpath to cross The Severn Lands. However, people have a tendency to stray from the path and some roam at will. 'Skylining' (i.e. people walking in an exposed position along the old sea wall disturbs the bird population and disturbance by dogs running freely, particularly during the bird breeding season, is also of great concern. The Severn Lands can be dangerous for grazing cattle, and their safety can be compromised when worried by dogs. There have been reports at Frampton Pill of cattle worrying by dogs resulting in the attendance of Fire and Rescue services.</p>	1
Re-routing of Severn Way back to original route, or New Access Infrastructure	£500 Design/feasibility £5,000 Path improvements?	£250 (Total £3000)		<p>The original route of the Severn Way was diverted in 1990 onto the wetland habitat. This has caused problems underfoot as it is often covered in water and the current boardwalk requires regular maintenance. Consequently, people and dogs frequently leave the footpath to seek an alternative route and cause disturbance to birds. Look at feasibility of diverting the Severn Way back to its original route to avoid wet habitat. Dependant on agreement of landowners. If the current route is to be maintained, cost would depend on surfacing, and would require some permeability to allow wet seepages to continue.</p>	1
Creation of viewing locations from the canal towpath (2)	£2,500 - £20,000 £2500 graphics panel £2,500 viewing platform £1000 bench £600 steps			<p>Scale of infrastructure could be tailored to budgets. Initially display boards erected, benches, possibly will require some low tech step to provide raised views, and could include a screen and/or an area of hard standing. This could include a viewing platform just south of Saul Lodge ('The Tumps') beside the towpath, and viewing across the reed bed just north of Splatt Bridge. Dependent on agreement of the Canals and River Trust.</p>	2

Interpretation board at Splatt Bridge to help visitors understand the sensitivity of the habitat. Board on second field gate deterring access.	£2,500 graphics £500 basic sign			Aiming to explain the importance of the habitat on The Severn Lands on the first gate and what to look out for along the Severn Way (canal towpath). Putting the landscape in context and request co-operation as there is no access to Frampton Warth. Second sign would be more direct sentiment around "no access" "keep out"	1
Raise bund in field south of Splatt Bridge (Saltmarsh) to improve water retention in Slimbridge	£500			Could be bolted onto another project where clay could be won for scrapes or pond lining. Raising current bund by a few inches would help retain water at the Northern end of Slimbridge parish.	1
Remedial works to the old bed of the river Cam south of Splatt Bridge (in Saltmarsh and The Ryalls)	£500			Minor works are required to deal with a couple of settlement issues beside the driftways over the old bed of the Cam which was re-excavated in 2010 to improve wetland habitat.	2
Lowering low quality hedge to improve sightlines and reduce predator perches.	£500 first year		£200 in subsequent years to manage hedge in three sections on rotation. (Total £2400)	Could be rolled up with other scrub/hedge management projects. Possible task for warden if in post otherwise could be contracted. Another option may be to remove the hedge entirely, but only with the full agreement of Frampton Court Estate (when presented with evidence to justify any hedge removal rather than lowering).	2
Reduction in tree or scrub height along seawall to improve sightlines and reduce predator perches.	£1,500 first year		£200 in subsequent years if cattle grazing insufficient to keep in check. (Total £2400)	The scrub is a valuable habitat but needs to remain low. In places it has grown above the top of the sea wall. Target for all scrub to be below this. Probably grew up when grazing was too low or absent.	2
Removal of decayed and redundant fencing	£500			Linked to potential predation impacts on SPA. Secure reduction in predator opportunity and enables better grazing management and viewing. May reduce physical nuisance to livestock.	
Reed habitat channel/choked ditch, with natural pools. Reduce impact of tidal pressure and give protection to the canal and canal banks, slows water flow allowing sediments and debris to	£35,000 Establishment over a three year period with most of cost in first year. ?		£1000 Ongoing maintenance of fence and habitat.  (Total £12000)	Would require machinery works and planting of reed rhizome. Potential to need protection from grazing wildfowl during establishment, and from cattle long-term. Fenced along its length. Ongoing maintenance could be covered by warden post or contractors?.	1/2

deposit.					
Allow succession of vegetation to saltmarsh. Continuance of grazing on The Severn Lands	There are approximately 100 acres of marshland grazed between Splatt Bridge and Hock Ditch which will require varying degrees of management.	£10,000	£500 (Total £6000)	The grazing of cattle on The Severn Lands helps to maintain valuable Atlantic Saltmarsh habitat and is an essential component of Environmental Stewardship. However, tidal incursion and the creation of wetland areas to support bird species are making the economics of grazing the warths less viable and management of stock more difficult. There is a likely need to reduce the rent charged for grass keep and potential need to compensate the landowner for a loss of income over time. (currently £17.50 per acre).	2
Create lower lying wetland scrapes to encourage water birds.				Limited ongoing management required. May need to do a limited amount of maintenance i.e. removal of deposited silt on rotation or creation of replacement scrapes.	1
Refuge for cattle on higher land (Pump Ground)		£20-30,000 (Assumed £25000)		To encourage continued grazing of grasslands/saltmarsh.	1

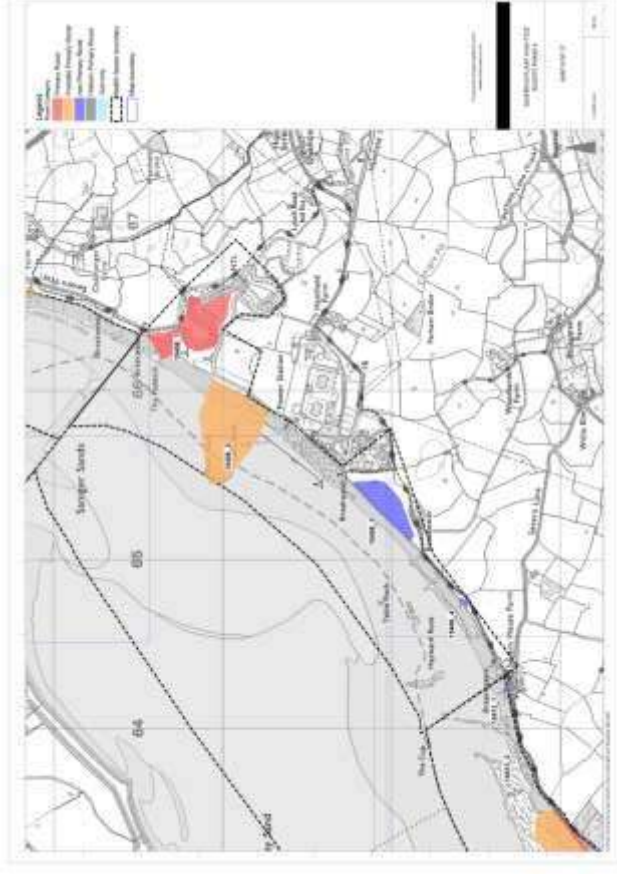


Recommendation	Set-up/Capital Cost	Annual Cost	Notes	Priority
<b>3. SHARPNESS DOCK &amp; PURTON PROJECTS</b>			<p>Sharpness Dock is regarded as one of the honeypot sites within Stroud Districts offering access to the estuary. The docks are owned and managed by Canals &amp; River Trust. The work proposed under this project will help manage access during the critical passage and overwintering seasons for the SPA bird assemblage. This will help relieve any pressure on quieter refuge areas elsewhere on the estuary e.g. Berkeley Pill. Area comprises couch dominated grassland and reedbed on accreted estuarine mud. North of SARA is an area key to Wigeon and Mallard with possible primary roosts for Pintail, Snipe and Spotted Redshank</p>	
Improvements to access, infrastructure and provision of engagement materials	£30,000	£1000 (Total £120000)	Aim is to encourage visitors to use this locality as one of the honey pot sites for the estuary. May require car-parking infrastructure, path repairs and management, improved way marking and interpretation boards.	





Recommendation	Set-up/Capital Cost	Annual Cost	Notes	Priority
<b>4. SEVERN BERKELEY SHORE</b>			This area has identified high tide roosts g the critical passage and overwintering seasons for the SPA bird assemblage. It comprises a variety of habitats including mudflats, boulder shore, tidal channel, saltmarsh, and salt tolerant grassland. The tidal channel provides a significant area of slack water and sheltered shoreline for wildfowl and waders to roost. Berkeley Pill is a primary roost for Wigeon and Snipe with possible primary roost for Redshank.. Disturbance from dog walkers and wildfowlers.	
Create lower lying wetland scrapes to encourage water birds.	£10,000	£500 (Total £6000)	Limited ongoing management required. May need to do a limited amount of maintenance i.e. removal of deposited silt on rotation or creation of replacement scrapes.	1
Allow succession of vegetation to saltmarsh. Continuance of grazing.	£?	£?	The grazing of cattle to maintain valuable Atlantic Saltmarsh habitat and is an essential component of Environmental Stewardship to support bird species. There is also a likely need to reduce the rent charged for grass keep and potential need to compensate the landowner for a loss of income over time.	2
Refuge Areas and Access. Identify additional areas where modifications could be made to protect the SPA assemblage from disturbance.	£12,000 Feasibility study		Would be good to be able to consider refuge and access rerouting options both on and off the designated site. e.g. projects further inland on areas which provide roosting and/or feeding for species within the assemblage. Subsequent project delivery is currently un-costed as dependant on opportunities.	1
Berkeley Pill –Education particularly in relation to dog walkers (code of practice) and signage.			Signage in relation to dog walkers (code of practice) keeping dogs on lead between the signs between the months of November & April with reasons why this is important and info on over wintering bird assemblages and the ecological importance of the Severn estuary.	2
Berkeley Pill – Explore potential with landowners to divert footpath away from sensitive high tide roost site at Berkeley Pill during winter months to less ecologically sensitive location.			Would be good to be able to consider refuge and access rerouting options both on and off the designated site. e.g. projects further inland on areas which provide roosting and/or feeding for species within the assemblage. Subsequent project delivery is currently un-costed as dependant on opportunities and potential for development as part of the Local Plan review over next 5 years..	1



Recommendation	Set-up/Capital Cost	Annual Cost	Notes	Priority
<p><b>5. OTHER ACTIVITIES ALONG SEVERN ESTUARY MARGINS IN STROUD DISTRICT</b></p> <p>Advice to and work with landowners and contractors on how to increase the suitability and capacity of new habitats and infrastructure.</p>	<p>£3K-£5K Potentially a few thousand each year.</p>	<p>£200 per day required e.g. supervising contractors on site. Advising.</p>	<p>The work proposed under this project will help manage access during the critical passage and overwintering season for the SPA bird assemblage. The aim will be to relieve recreational pressure on the quieter refuges areas throughout the estuary.</p> <p>Part of warden's role or secondment of relevant staff from GWT or WWT. Number of days will depend on which projects are being undertaken and level of input required.</p>	<p>1</p>

Wardening /Visitor Engagement			£40,000	Potentially short-term (c.10 years). Includes office and vehicle costs. (but some of warden time may end up focussed on existing impacts) warden could undertake all the tasks below and many of the annual management tasks in the projects above.	2
Joint partnership leaflet	£5,504 based on design and printing 3000 leaflets every 5 years.			Could be available from leaflet stands in various locations including; visitor infrastructure at Slimbridge, adjacent to graphics boards, Saul Junction visitor centre etc	
Improved Access Investigate feasibility to create circular walks from the canal which include good views of the estuary and or access to “waters edge” in less sensitive and /or honey pot locations . Target up to 3 areas for feasibility	£5,000 feasibility study (x3) £5,000 to facilitate route creation (x3) Total £20000		£1000 annual cost to strim, check route, change signs/wardening etc Total 12000	Could consider routes that are current public rights of way or new routes. On the latter could require all dogs on leads. May even be an option to provide a “permitted” walk for locals in certain areas e.g. options for Frampton residents to access seawall.	2 unless easy win can be identified early on.
Refuge Areas. Identify additional areas where modifications could be made to protect the SPA assemblage from disturbance.	£12,000 Feasibility studies			Would be good to be able to consider options both on and off the designated site. e.g. projects further inland on areas which provide roosting and/or feeding for species within the assemblage. Subsequent project delivery is currently un-costed as dependant on opportunities.	
Continued monitoring of levels of usage	£10,000		£1,500 (Total 18,000)	Most of the counts every five years, undertaken by warden staff. Budget for automated counters and casual staff/consultancy support as required and included as an annual figure	1 (year 5)
Monitoring of wildfowl high tide and medium land roosts.			£1,000 (Total 12,000)	Visitor questionnaire work undertaken every 5 years (i.e. annual budget of £1000 equates to £5000 every 5 years).	1 (year 5)
Disturbance monitoring			£1,000 (where £500 on high tide) (Total 12,000)	Small annual fee to ensure data collated by local co-ordinators	1
Parking Locations	£2,000 to mark spaces in current car parks £20,000 Total		£1,000 (Total 12,000)	Could be undertaken at set intervals - e.g. every 10 years or on an annual basis	1
				Depends entirely on outcome of the review. £20000 would allow one or two small projects to probably be achieved. NB marking out of car parking spaces may encourage better use of space.	

Total Cost 2018 - 2031	553054	137800 Total of annual costs used ie over 12 years.		
	£690854.00			



Saul Warth looking across towards the Arlingham Peninsula.

## 2. Introduction



### 2.1 International Wildlife Designations

2.1.1 The Severn Estuary is located between Wales and England in south-west Britain. It is a large estuary with extensive intertidal mud-flats and sand-flats, rocky platforms and islands. Saltmarsh fringes the coast backed by grazing marsh with freshwater ditches and occasional brackish ditches. The seabed is rock and gravel with sub-tidal sandbanks. The estuary's classic funnel shape, unique in the UK, is a factor causing the Severn to have the second- highest tidal range in the world (after the Bay of Fundy in Canada). This tidal regime results in plant and animal communities typical of the extreme physical conditions of liquid mud and tide- swept sand and rock.

The species-poor invertebrate community includes high densities of ragworms, lugworms and other invertebrates forming an important food source for passage and wintering waders. Reefs of the tube-forming worm *Sabellaria alveolata* are also found here.

A consequence of the large tidal range is an extensive intertidal zone, (one of the largest in the UK), that support large numbers of wildfowl and wading birds with over 80,000 birds visiting every winter. It is a key refuelling stop for important spring and autumn passage birds during

the spring and autumn migration periods for waders moving up the west coast of Britain, as well as in winter for large numbers of waterbirds, especially swans, ducks and waders.



**Figure 1:** International Designations on the Severn Estuary.

### 2.1.2 Special Area of Conservation (SAC)

The Severn Estuary is designated as an SAC for its estuaries, subtidal sandbanks, reefs, intertidal mudflats and sandflats, saltmarsh and populations of sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis* and twaite shad *Alosa fallax*.

### 2.1.3 Special Protection Area (SPA)

The site is designated as an SPA for supporting populations of European importance of wintering Bewick's swan *Cygnus columbianus bewickii*, Curlew *Numenius arquata*, Dunlin *Calidris alpina alpina*, Pintail *Anas acuta*, Redshank *Tringa tetanus* and Shelduck *Tadorna tadorna* and passage Ringed Plover *Charadrius hiaticula*.

It is also designated for supporting approximately 100,000 wintering waterfowl per year including the following species: Gadwall *Anas strepera*, Shelduck *Tadorna tadorna*, Pintail *Anas acuta*, Dunlin *Calidris alpina alpina*, Curlew *Numenius arquata*, Redshank *Tringa totanus*, Bewick's Swan *Cygnus columbianus bewickii*, Wigeon *Anas penelope*, Lapwing *Vanellus vanellus*, Teal *Anas crecca*, Mallard *Anas platyrhynchos*, Shoveler *Anas clypeata*, Pochard *Aythya ferina*,

Tufted Duck *Aythya fuligula*, Grey Plover *Pluvialis squatarola*, White-fronted goose *Anser albifrons albifrons* and Whimbrel *Numenius phaeopus*.

#### 2.1.4 Ramsar Site

The Convention on Wetlands of International Importance, known as the Ramsar Convention, was signed in Ramsar, Iran, in 1971. The overarching objectives of the Convention are to stem the loss and progressive encroachment on wetlands now and in the future. It recognises the importance of wetlands for human well-being, as well as biodiversity conservation. The Severn Estuary was classified as a Ramsar site in 1995. The Severn Estuary is designated for its saltmarsh, subtidal sandbanks, intertidal sandflats and mudflats and estuaries (Ramsar Criterion 1), for its unusual estuarine communities (Criterion 3), for its diverse fish population and migratory fish including Atlantic salmon *Salmo salar*, trout *Salmo trutta*, sea lamprey, river lamprey, allis shad, twaite shad and eel (Criteria 4 and 8) and for the aforementioned waterfowl populations (Criteria 5 and 6).

The key designation areas are shown on Figure 1 with key habitats shown on Figure 2 within the Stroud District.



**Figure 2 :** Key Habitats within the Internationally Designated Areas.

## 2.2 Conservation Objectives

2.2.1 Management schemes make a significant contribution to the implementation of the EC Habitats Directive and the Birds Directive for European Marine Sites.

Article 6 of the Habitats Directive defines the requirements for the management of European Sites, specifically with Articles 6(1) and 6(2) of the [Habitats Directive](#)<sup>1</sup>, which require Member

### Articles 6(1) and 6(2) of the Habitats Directive

(1) For special areas of conservation, Member States shall establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans, and appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.

(2) Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.

States to establish and implement appropriate measures to conserve and avoid deterioration of the natural habitats and species for the areas that have been designated.

2.2.2 The conservation objectives for the Severn Estuary SAC are, subject to natural change, to maintain in favourable condition the:

- estuaries;
- subtidal sandbanks;
- reefs;
- intertidal mudflats and sandflats;
- saltmarsh;
- sea lamprey population;
- river lamprey population; and
- twaite shad population.

The conservation objectives for the Severn Estuary SPA are, subject to natural change, to maintain in favourable condition the populations of wintering Bewick's swan, curlew, dunlin, pintail, redshank and shelduck and passage ringed plover, and the wintering waterfowl population generally, by maintaining their habitats in favourable condition.

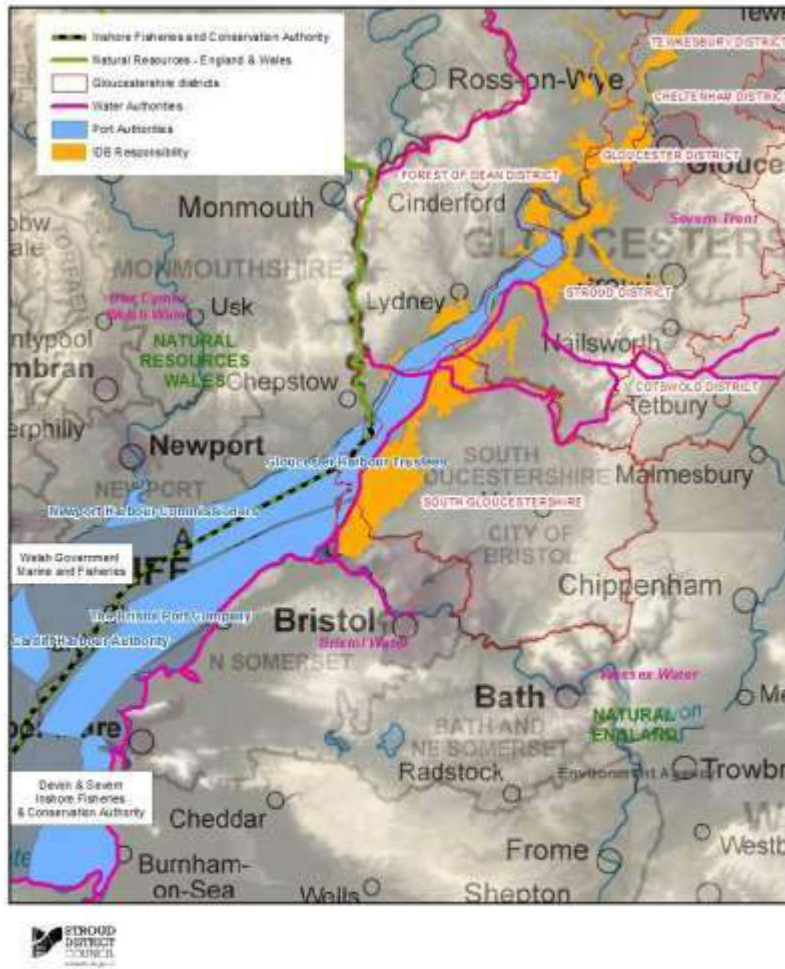
## 2.3 Conservation Status of Site of Special Scientific Interest (SSSI) Units

1 <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043>

2 <http://www.legislation.gov.uk/ukxi/2010/490/regulation/36/made>



- 2.3.1 The Severn Estuary is also noted as a SSSI. The SAC, SPA and Ramsar site is also overlain by 36 SSSI Units. According to the previous Unit assessments (2010 and 2012), 25 Units were assessed as being in 'favourable' condition, eight were in 'unfavourable- no change' condition and three were in 'unfavourable- declining' condition. The Upper Severn SSSI comprises 11 Units of which 2 in Stroud District are Saul Warth and Slimbridge Foreshore. These two were assessed as unfavourable – recovering in 2014 with abandonment of old defences and breaches in 2013. Whilst 9 units were considered favourable, the Natural England explanatory text makes clear that the results from monitoring demonstrate that the feature(s) in the unit are meeting all the mandatory site specific monitoring targets, but this is a minimum standard for favourable condition for the designated features and there may be scope for the further (voluntary) enhancement of the features / unit.
- 2.3.2 The Severn Estuary supports populations of waterbirds and seabirds that are of national or international importance. Declines in the numbers of waders on the Severn Estuary and the southwest over the last two decades have been linked to climate change. Long-term observations on fish assemblages in the Severn Estuary, reveal major shifts in last decade which various scientific papers consider are predominantly climate-related. However it is clear that there are many complex interactions in terms of nesting , shelter and food on which bird numbers and distributions may depend beyond climate change factors. This presents a difficulty that mitigation attempts may not always be as successful or as predictable as intended. For example bird populations can be affected by changes in prey availability and quality which are in turn a function of inter-tidal area, tidal range and curve, salinity and sediment erosion and deposition (amongst a series of factors upon which climate may have an overriding influence). This complexity is likely to be relevant to the ecosystem as a whole and it is this intricacy which can present problems in prediction. Of all the changes, probably the regulatory framework relating to environmental management such as the European Habitats Directive(92/43/EEC), s Birds Directive (79/409/EEC) and European Water Framework Directive (2000/60/EC) have offered an opportunity to manage more effectively the Estuarine environment. In this context of complex nature of estuarine ecosystems requires the Council to work in partnership with a variety of Severn Estuary Stakeholders and Statutory Agencies to understand the extent, direction and causes of change. Figure 3 below shows the interests of different statutory partners of the Estuary around this District.



**Figure 3:** Statutory Interests along the Severn Estuary.

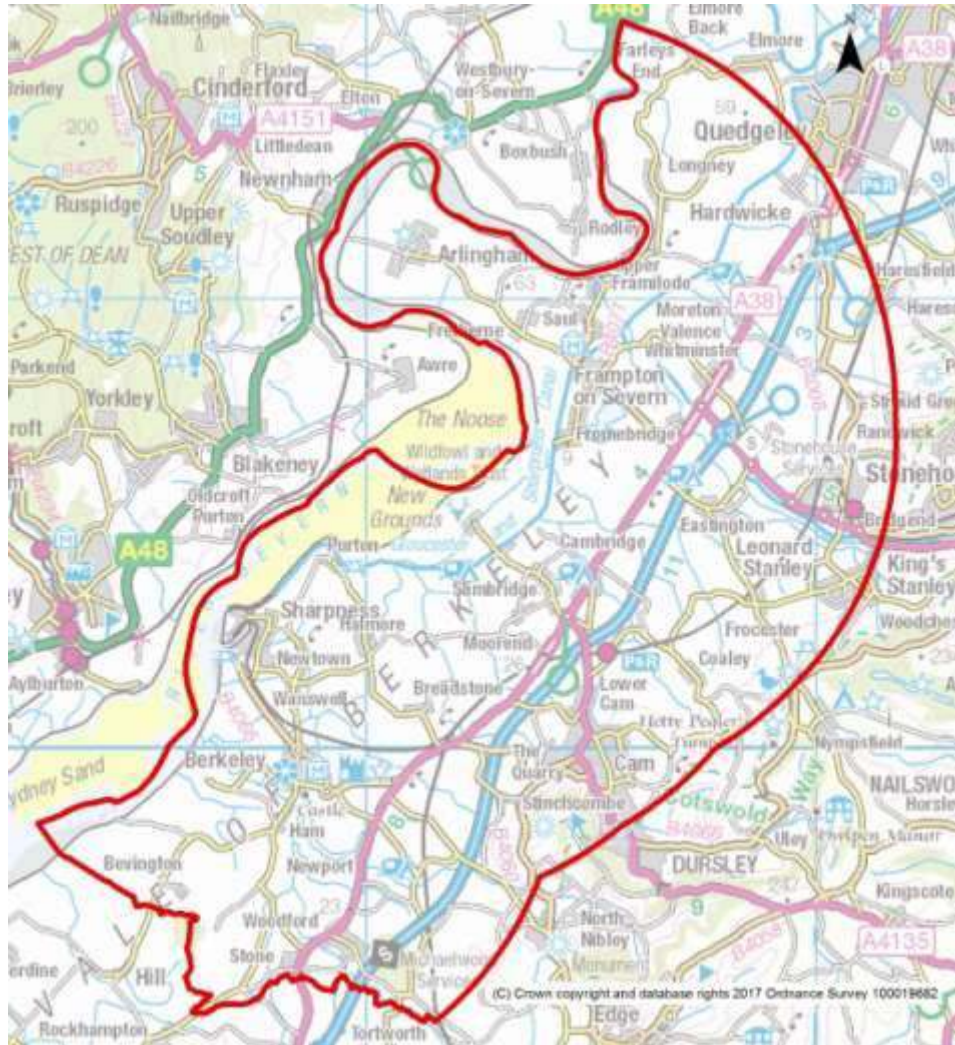
© ASERA &  
J. Coleman/A. Plant



# 3. Mitigation Strategy Framework

## 3.1 Relevant Studies and Justification of a Strategy Need

- 3.1.1 As set out in the Habitat Regulations Assessment of the Stroud District Local Plan (carried out by URS in 2014), it was identified that recreational pressure had the potential to impact upon the qualifying features for which the Severn Estuary was designated, in particular through disturbance to the bird species which use the Estuary for feeding and roosting during the Winter. Little was known about the baseline of recreational pressure exerted on this part of the Upper Estuary, nor the effects of recreational activity on its qualifying features. As a consequence, Delivery Policy ES6 of the Adopted Local Plan identified the need for further assessment work to quantify baseline levels of recreational pressure and analyse patterns of visitor access with an assessment of whether recreational activity is likely to come into conflict with overwintering bird assemblages.
- 3.1.2 This further recreation assessment work was carried out by Ecological Planning and Research (EPR) Ltd in the Winter 2015/16. Whilst disturbance to overwintering birds was identified as the key potential impact associated recreational pressure, both in discussion with Natural England and using their Site Improvement Plan for the Estuary published in 2015, it was agreed that public access/disturbance could also cause physical damage through trampling and erosion and pollution through littering and dog fouling. Such impacts accord with the findings of similar bird disturbance surveys carried out in the Solent (Hampshire), North Kent Marshes and Exe Estuary (Devon). The EPR work concluded that the housing, employment and tourism development within and outside Stroud District would generate modest increases of recreation particularly around Sharpness, Purton, Splatt Bridge and Fretherne Bridge. This activity was to conflict with important areas for overwintering birds at Sharpness and Saul Warth based on data at that time and therefore a likely significant effect on the features for which the Severn Estuary was designated could not be ruled out. The report identified that some level of strategic impact avoidance was probably required working with key partners. A relatively high proportion of the visitors interviewed had come outside the District. However further analysis determined a visitor catchment of 7.7km from the Severn Estuary within which developments involving a net increase in housing would be required to contribute to the funding of impact avoidance and mitigation measures illustrated overleaf. The study represents a key component of the emerging evidence base on the likely effects of increased recreational pressure on the qualifying features of the Severn Estuary.



Stroud District 7.7km Severn Estuary Core Catchment Map (where new net housing will contribute to recreational pressure). Source EPR Visitor Survey Analysis 2016.

- 3.1.2 The preceding study identified a need for further research in order to achieve an impact avoidance strategy. During 2016/17 Natural England undertook phased work to identify roost sites in the wider Severn Estuary SPA that provided further data on wintering water bird high tide roosts particularly in Gloucestershire. Whilst the EPR Visitor Study filled an important gap of evidence, a complementary study of bird populations and key roost sites was required to assess both impact and secure appropriate, proportionate and targeted mitigation. The NE study identified 97 significant roost sites of which 30 are primary roost sites for the SPA, regularly holding more than 1% of the SPA population of one or more of the key interest species. A further 38 roost sites can be considered potential primary roost sites as the higher end of the estimates for these roost sites exceeded the 1% of the SPA population. Relevant maps of their location within the Stroud District have been incorporated into this Strategy. These formed the basis of approaches to landowners with NE where potential mitigation and management opportunities identified. Key species covered by the Study are set out below:

Table 3.1 SPA qualifying species listed for the Severn Estuary on the Natura 2000 standard data form<sup>2</sup>

English name	Scientific name	Type
Gadwall	<i>Anas strepera</i>	Non-breeding population <sup>1</sup>
European White-fronted Goose	<i>Anser albifrons albifrons</i>	Non-breeding population <sup>1</sup>
Dunlin	<i>Calidris alpina alpina</i>	Non-breeding population <sup>1</sup>
Bewick's Swan	<i>Cygnus columbianus</i>	Non-breeding population <sup>1</sup>
Shelduck	<i>Tadorna tadorna</i>	Non-breeding population <sup>1</sup>
Redshank	<i>Tringa totanus</i>	Non-breeding population <sup>1</sup>

<sup>1</sup> Specified as 'wintering' on the Natura 2000 data form, but the term "non-breeding" is now preferred, e.g. on the Site Conservation Objectives (Natural England, 2016a).

Table 3.2 SPA Waterfowl Assemblage Species listed for the Severn Estuary by the 2001 SPA Review<sup>3</sup>

English Name	Scientific name
Wigeon	<i>Anas penelope</i>
Teal	<i>Anas crecca</i>
Mallard	<i>Anas platyrhynchos</i>
Pintail	<i>Anas acuta</i>
Shoveler	<i>Anas clypeata</i>
Pochard	<i>Aythya ferina</i>
Tufted Duck	<i>Aythya fuligula</i>
Grey Plover	<i>Pluvialis squatarola</i>
Lapwing	<i>Vanellus vanellus</i>
Whimbrel	<i>Numenius phaeopus</i>
Curlew	<i>Numenius arquata</i>

Table 3.3 Additional SPA Waterfowl Assemblage Species listed on the 1993 SPA citation<sup>4</sup>

English Name	Scientific name
Ringed Plover	<i>Charadrius hiaticula</i>
Spotted Redshank	<i>Tringa erythropus</i>

<sup>2</sup> <http://jncc.defra.gov.uk/pdf/SPA/UK9015022.pdf>

<sup>3</sup> Stroud et al. (2001)

<sup>4</sup> Natural England (2016b)

Table 3.4 Species listed in the Severn Estuary SSSI citation

<b>English Name</b>	<b>Scientific name</b>
Wigeon	<i>Anas penelope</i>
Grey Plover	<i>Pluvialis squatarola</i>
Ringed Plover	<i>Charadrius hiaticula</i>
Whimbrel	<i>Numenius phaeopus</i>
Curlew	<i>Numenius arquata</i>
Turnstone	<i>Arenaria interpres</i>
Knot	<i>Calidris canutus</i>
Dunlin	<i>Calidris alpina alpina</i>
Redshank	<i>Tringa totanus</i>
Snipe	<i>Gallinago gallinago</i>

There were other parts that contained roosts and feeding areas that are also probably crucial to the survival of some overwintering birds notably Curlew and Snipe between Sharpness and Oldbury. The findings of this work further informed the HRA requirements for assessing recreational impacts and recommendations set out here. It recommended protection of Primary Roosts and a number of Possible Primary Roosts that could be more significant than the survey data suggested should be a priority in any conservation program for the Severn Estuary. Such protection could take several different forms including direct approaches to landowners, diversion or screening or footpaths, effective signage and, in some cases, wardening. Approaches should also be made to estuary users who may not know of the impact their activities are having on roosting birds within the SPA. Particularly important target audiences include dog walkers, recreational boaters, wildfowlers and owners of light aircraft. Locations with particular problems of disturbance could benefit from targeted action Various approaches have already been made by WWT in relation to disturbance of the estuary and the reserve at Slimbridge and these could be built upon to better effect across the SPA Enhancement of sites currently, historically or potentially host to large numbers of roosting or feeding birds at high tide could be considered. Agricultural land along the Severn would benefit from a targeted scheme for land management and capital works in the post-Brexit era, with schemes such as the reedbed enhancement on Frampton Court Estate, as well as the wetland creation instigated by GWA at Brims Pill, being good examples of what can be achieved. The potentially vital importance of certain now-rare habitats such as the unimproved grassland areas at Lower Dumball and Whitescourt, must be emphasised and reflected in conservation advice to farmers and landowners. This Strategy and its identified projects intends to develop these successes and approach to land management along the Severn Estuary.

## 3.2 Aims

3.2.1 The strategy has two broad aims:

- To support sustainable growth whilst protecting the integrity of European wildlife sites from impacts relating to recreational disturbance
- To reduce the existing recorded recreation impact on birds on the European wildlife sites in order to meet duties relating to the maintenance and restoration of European sites, as required by Article 4(4) of the Birds Directive.

## 3.3 Legal and Policy Requirements

3.3.1 The National Planning Policy Framework (NPPF) provides the Government's policy framework within which sustainable growth should come forward. It is fundamental to the success of any strategic mitigation strategy for European sites that such a strategy is founded on sound planning principles. This strengthens the strategy and ensures its deliverability in the planning system.

3.3.2 The first aim of this strategy relates to new development and the need for competent authorities to ensure that new growth will not adversely affect the integrity of the Severn Estuary European site. This is in accordance with Article 6(3) of the Habitats Directive, transposed into Regulation 61 of the Habitats Regulations, whereby competent authorities are required to ensure that any plan or project for which they are authorising, or undertaking themselves, will not adversely affect the integrity of a European site. This is met by a competent authority in one of two ways. Firstly, the Habitats Regulations allow for a competent authority to be able to screen out the proposed plan or project from any further detailed assessment if it can be determined that it will not be likely to have a significant effect on any European site due to the nature of the proposal or any measures built into the proposal to avoid the likelihood of significant effects. Where proposals cannot be initially screened out, the competent authority will proceed to a more detailed level of assessment, known as the 'appropriate assessment,' gathering the best scientific information to determine whether an adverse effect on the integrity of the European site can be ruled out. Measures that can adequately mitigate for any identified effects are considered during this detailed assessment, and added to the proposal where necessary, usually through the use of planning conditions or legal agreements.

3.3.3 Stroud District in the context of the Upper Severn has identified through the HRA process and the subsequent visitor surveys in 2016 that an increase in the local Stroud population is very likely to contribute to an increase in visitors to the Estuary, when considered cumulatively/in combination with additional housing to be delivered in other authorities surrounding the estuary and a probable increase in tourist visitors. Due to the presence of the Severn Way immediately adjacent to the estuary it is also considered very likely that future Stroud residents (particularly those who live immediately adjacent to the estuary. The Severn Estuary (Stroud District) Visitor Survey Report (June 2016) recommended a visitor catchment area of 7.7 km from the Severn Estuary within which developments involving a net increase in housing may be required to contribute to the funding of impact avoidance and mitigation measures. Analysis

with the aid of GIS mapping software has identified the areas around Sharpness and Saul Warth as having the highest potential for conflict between recreational activity and overwintering birds.

- 3.3.4 The Council has therefore targeted mitigation actions along the designated SAC/SPA/Ramsar in light of evidence committed to in its Local Plan Delivery Policy ES6 and accompanying supporting text. Originally this Strategy targeted actions at Saul Warth and around Slimbridge where with the agreement of Natural England the SSSI unit status was determined as unfavourable. The areas of action have been extended to incorporate the Natural England High Tide Roost Study results in 2017 working with WWT, NE, Glos SES and ASERA. This Strategy demonstrates how SDC is complying with its requirements through the application of policy in the Local Plan, undertaking further research and analysis, and acting upon those recommendations to identify necessary mitigation measures along the Severn Estuary. A similar Strategy was put in place by Stroud District Council in 2015 to avoid impacts on Rodborough Common SAC. This stipulates that developments resulting in a net increase of one dwelling or more within a 3km visitor catchment must either contribute to the funding of specific projects set out in the Strategy or provide their own bespoke impact avoidance measures. Costs are on a per-dwelling basis and are collected through unilateral s106 contributions.
- 3.3.5 Defining potential impacts and making sound decisions relating to when a plan or project is likely to have a significant effect, whether there will be an adverse effect on site integrity and the need to take a precautionary approach whilst not being unjustifiably over precautionary, is a challenging and sometimes very difficult task. These decisions are important not only because they relate to the highest level of wildlife protection, but also because the conclusions may ultimately determine whether a plan or project should proceed or not.
- 3.3.6 Looking forward, it is acknowledged that longer term that Severn Estuary authorities should move towards landscape scale mitigation and seek strategic approaches to securing mitigation for new growth, where the potential impact on European sites is similar for each individual development. This approach will require cooperation and a strategic overview being taken normally supported by local plan policy. It is likely to require a future formal partnership across administrative boundaries and drawing on input from Natural England, ASERA, Severn Estuary Partnership (SEP), Natural Resources Wales and both national and local nature conservation bodies or established partnerships.
- 3.3.6 This strategy will primarily relate to the interest features of the Severn Estuary SAC / SPA / Ramsar. However as noted in the preceding paragraph into the future the strategy will not necessarily be limited to measures implemented within these sites, as the interest features may well occur outside the site boundaries at certain times, and in addition, measures relating to access may well be relevant well-outside the site boundaries (for example the provision of new routes or new green infrastructure). The strategy will address the impacts of recreational activities, and not to impacts relating to other activities (for example there may additional impacts from industrial development, shipping, etc.). New housing may also have other impacts that are outside the scope of the strategy – for example effects on water quality. Impacts that relate solely to other (i.e. non-avian) interest features of the European Sites are also beyond the



scope of this current strategy and could be considered as part of the Local Plan Review and supporting HRA Evidence going forward.

## 3.4 Conclusions and Summary

- 3.4.1 To summarise section 3, the interest features of the Severn Estuary include breeding birds, as well as passage and wintering birds. The declines and changes in bird populations particularly relate to wintering and climate change. Mitigation measures will need to be secured in perpetuity, and therefore there is a need for the strategy to last and look to the long-term. The strategy should be robust enough to give certainty that European site interest will be protected, but at the same time flexible enough to be reviewed and modified over time, in line with results indicated by monitoring. It is difficult to be confident of how the coastline, the distribution of birds, the distribution of prey and access patterns may change over long-time periods. Different weather conditions may result in people using the coast differently and result in seasonal shifts in bird numbers and access levels. As such the strategy needs to be able to respond to circumstances and carefully monitor changes.
- 3.4.2 As at Rodborough Common SAC, this strategy should be cost effective in terms of management, collection, fund-holding, distribution and accounting. It should seek to put in place measures that are required, but not those that are over and above that which is necessary to give certainty that the European sites will be adequately protected, and not those that deliver other objectives for the local area. Requirements of new development should be fairly and reasonably related in scale and kind to the development, as required by paragraphs 204 and 206 of the National Planning Policy Framework (NPPF). It is important to note that Stroud District Council, as the competent authority is responsible for securing the necessary mitigation and funding for some measures may need to be raised from other sources (this accords with the solutions focussed approach advocated in paragraph 187 of the NPPF). The Council will work in partnership with other agencies to ensure mitigation measures are in accordance with published evidence and the requirements of paragraph 158 of the NPPF. Elsewhere the studies in the Solent, North Kent and Exe Estuaries have resulted in similar strategies which also set out targeted and evidence based recommendations for mitigation measures and projects that can be funded through per dwelling contributions. It is concluded that it is appropriate to implement this Strategy for the Severn Estuary SAC/SPA/Ramsar within the Stroud District.



## 4. The Stroud District Mitigation Strategy Framework

### 4.1 Types of Mitigation

4.1.1 The Council has worked with and discussed a range of potential mitigation options with Natural England, Association of Severn Estuary Relevant Authorities, the Severn Estuary Partnership, Canals and Rivers Trust, Wetlands and Wildfowl Trust, Environment Agency and Stakeholders such as farmers, recreation and interest groups. The primary focus of this work is based on bird disturbance, but habitat improvements or creation will create opportunities for other identified plant and animal species of importance. It is important to take these into account and take opportunities for their improvement in association with any mitigation works and their planning. Developers of larger or strategic schemes may propose their own mitigation solutions (which can complement this Strategy) and which will be considered on a case by case basis.

#### Habitat Management

4.1.2 Habitat management measures could include creation of artificial, undisturbed roost sites, creation of additional feeding areas (e.g. managed retreat or new lagoons) or enhancement of habitats to provide better feeding sites (for example changes of management of wet grassland). Problems with these measures can include:

- There are existing roost sites that are largely free from disturbance,

- Wet grassland habitats (the obvious focus for changing management) are not used during the winter by many of the species identified as declining (such as dunlin and xxx)
- They may be dependent on opportunities and other plans (managed retreat or realignment proposed in the Severn Estuary Shoreline Management Plan 2 (signed off in 2016)),
- Some measures should be taking place anyway (management of the European sites to achieve favourable or improved condition),
- They are not necessarily compliant with the Habitat Regulations if new habitat is being created outside the SPA to compensate for deterioration of the SPA.

4.1.4 Hence the Council is working with a range of statutory stakeholders and other partners to deliver habitat management initiatives at Saul Warth and Slimbridge which should avoid these problems.

#### **Planning and off-site measures (including SANGs)**

4.1.5 Ensuring development does not take place around sensitive sites would effectively avoid issues relating to the impacts of new development. It is acknowledged however that there are now precedents around the UK. With those SPA and SAC sites development exclusion zones are clearly set out in plans. For example local authorities around the Dorset Heaths and Thames Basin Heaths, have both included 400m zones around the heathland sites. Establishing such a zone with respect to disturbance issues and estuarine sites is much more difficult, as recreational users travel from a wide area to visit and use this estuarine area as demonstrated by the Severn Estuary (Stroud District) Visitor Survey Report (June 2016). A 'sterile' zone of no development around the Severn Vale and estuarine environment would encompass ports, town centres, villages and hamlets as well as a number of brownfield sites along the Gloucester Sharpness Canal. Development in this scenario would potentially be halted or pushed to greenfield sites whilst also preventing regeneration of centres such as Sharpness and Newtown, Berkeley, Stonehouse, Cam, and parts of Dursley for example. This approach is not therefore recommended here and would run contrary to the agreed overall strategy of the Local Plan.

4.1.6 The provision of Suitable Alternative Natural Greenspace 'SANGs' and other additional green infrastructure areas are potentially appealing solutions to resolving some disturbance impacts. By providing additional space for visitors, it would seem intuitive that an area can support more visitors. In terms of visitors to the estuary, alternative sites are most likely to work for types of access that are not dependent on particular estuarine features – for example visitors who are simply drawn to sites because it is the nearest open space to their home, or because it is a convenient place to walk the dog and let the dog off a lead. The options to create alternative sites that provide estuarine scenery, locations to surf or view beautiful scenery including salt marsh and the Severn Bore are very limited. Given the high cost of purchasing land and securing management in perpetuity, SANGs are not 'quick wins' and should be carefully selected, targeted and planned. Taking a long view, SANGs may have a longer term and more strategic role in mitigation compared to other measures. SANGs have not got a proven track record of success across the Country and the Council believe currently that any such proposal must

clearly be carefully considered on a site-by-site basis and with a justification of success on other estuarine habitats. Other off-site measures relate to more local approaches, enhancing sites outside the European sites, managing visitor flows on adjacent sites, essentially drawing visitors away from European sites. These approaches do have some merit, but are small in scale and local. The Council will take a cautious approach (for the reasons set out )and will seek to work with Natural England in the consideration of any future SANG proposal should they come forward.

#### **Planning on-site access management**

- 4.1.7 Most on-site measures are relatively easy to implement, effective and relatively low cost. There are a range of management measures that relate to shore based access which would be relatively easy to implement and potentially low-cost, but they are mostly quite local and site specific. As such they could work to resolve issues in particular locations, enhance access in particular places and be carefully targeted. They all require some work 'on the ground', working with local landowners, rights of way officers and other relevant stakeholders, and as such could be considered as a series of individual small, discrete projects. Many can be targeted to resolve particular issues at sites or be tailored to particular access types. For example low screening or low fencing at particular locations may provide opportunities to keep dogs away from some key areas for birds. These kinds of measures can be phased/targeted as resources allow and as issues arise.

#### **Planning car parking**

- 4.1.8 Management of parking (reducing/redistributing spaces/closing parking locations/review of charging) is a means of managing access over a wide area, and applies to a wide range of different access types. Changes to car-parks can take place both on and off-site. In order to ensure success, careful work is needed initially to review existing parking, map parking and identify changes. Changes to parking may also be unpopular with some users, so would need to be undertaken carefully and considerately. It would be necessary to predict and monitor likely displacement to ensure that the pressure did not merely move from one sensitive area to another. Conducting a review, producing a car-parking 'plan' and liaising with users would all necessitate a degree of staff resources.

#### **Education and Communication / Awareness Raising**

- 4.1.9 Education initiatives, such as interpretation, guided walks, school visits, community events etc., are undertaken at many countryside sites and enhance people's visits to sites and their understanding of the local area. Such approaches are proactive, rather than reactive, but unlikely to solve problems in the short term and depend largely on the audience and style of communication. In general, therefore, education and awareness raising measures are likely to have wider conservation benefits, but there is relatively little evidence that such measures on their own will bring about rapid changes in people's behaviour and reduce disturbance. Good communication is however likely to be important when linked to other measures, to ensure visitors understand issues and to ensure clear guidance for people on where to go, how to

behave etc. ASERA has published a Severn Estuary European Marine Site Code of Conduct in 2016 to encourage the sustainable use of the coast, providing a safer environment for recreational users and visitors. Although the codes are voluntary, individuals and clubs are encouraged to respect and support them. This provides a means of clearly conveying messages about where to undertake different activities and how to behave, and provide a foundation to other measures such as enforcement. Wardens as people out 'on-site' can have an engagement role (talking to visitors, showing people wildlife, explaining issues etc.) and/or an enforcement role. Establishing a warden presence is relatively easy to implement, but employment costs over a long-period (in perpetuity) are high.

## 4.2 Mitigation Strategy Projects

- 4.2.1 The challenge with the strategy is that it needs to provide for the mitigation measures necessary to address the in-combination impacts of a range of development (including many small developments) spread over a wide area and coming forward over an extended time period. This Plan is focussed on Stroud District and the growth envisaged in its Local Plan lifetime. Longer term it is intended that a more strategic approach be taken working with SEP, SECG, ASERA and CaBA to deliver mitigation on a estuary wide scale. This strategy is intended to be interim and able to secure mitigation where there are numerous, small developments likely to come forward in the Core Catchment area. Any cross boundary approach to European site mitigation requires each planning authority to take full responsibility for the implementation of the strategic approach in their own administrative area. Each remains an individual competent authority and is therefore ultimately responsible for ensuring compliance with the Habitats Regulations for any plan or project taken forward under their authority. However, a strategic and cross boundary approach can provide notable benefits in terms of shared administration, consistency in implementation (proportionate to impacts), collaborative working to rectify existing impacts and fairness to developers across the neighbouring areas. This will be kept under review.
- 4.2.2 It is acknowledged that this strategy requires a level of flexibility to adapt, particularly in light of monitoring findings, in recognition of the fact that further information and opportunities will emerge. Access patterns may change over time, and new recreational activities may become more prevalent. Whilst declines in SPA interest features are known, there are some aspects that are not fully understood, and as the way in which the sites are used changes over time, threats and potential impacts on the birds may also change.
- 4.2.3 A partnership of local planning authorities, Natural England and those best placed to contribute to mitigation through their land ownership or remit could be responsible for the continued evolution of the strategy over time. A partnership/board/panel would be responsible for overseeing the whole project and reacting to any changes necessary as monitoring or other new information emerges. Some mitigation measures (e.g. enhancement of alternative sites) will depend on the response of private landowners). The partnership/board/panel would meet to agree how receipts can be spent in accordance with this interim strategy's identified projects.

4.2.4 Since the publication of the EPR Visitor Survey Report in June 2016, the District Council has been engaged with Natural England, ASERA, other Estuary Stakeholders (including Glos SES, Environment Agency, SEP, BTO, WWT, Severn Vision and Landowners amongst others) to produce a Strategy with a suite of measures that can either provide new alternative spaces in suitable locations away from the Severn, or protect or enhance degraded habitat areas next to the Severn, and can offer a range of appropriate access management and education measures. The outcomes and recommendations from discussions and site meetings with relevant stakeholders over the period 2016-17 are set out in the tables below:

Recommendation	Notes
<b>SAUL WARTH</b>	
	Saul Warth is regarded as one of the honeypot sites within Stroud District offering limited access to the estuary. Saul Warth occasionally contains standing shallow water on unimproved or semi-improved grassland. Six roosts of significant interest species including Curlew, Lapwing, Snipe, Gadwall, Grey Plover, Ringed Plover, Whimbrel and Knot. The work proposed under this project will help manage access during the critical passage (autumn and spring) and overwintering season for the SPA bird assemblage. The aim will be to relieve recreational pressure on the quieter refuge at the centre of the marsh. Some of the work will also contribute to better habitat for SPA birds as well as long term protection against erosion. Please refer to map xx in the introduction to this report..
Reduction in disturbance by dog walkers - Saul Warth.	Erecting a fence to prevent dogs straying onto and running across the sensitive habitats and disturbing the birds. Would run from hedge southern edge of field B and meet the footpath boundary. Staff time could replace the £1k annual cost for maintenance. Without a staff post annual clearance, repairs etc could be contracted out. There have been reports at Frampton Pill of cattle worrying by dogs resulting in fire and rescue services. Severn Lands can be dangerous for grazing.
New Access Infrastructure	Cost would depend on surfacing, and would require some permeability to allow wet seepages to continue. Look at feasibility of diversion of the Severn Way back to original route (circa 1976) to avoid wet habitat. Dependant on agreement of Mr Butts estate or look at potential of a boardwalk as last resort.
Creation of viewing locations from the canal towpath (2)	Scale of infrastructure could be tailored to budgets. Initially display boards erected, benches, possibly will require some low tech step to provide raised views, and could include a low key shelter or screen and/or an area of hard standing. This would include viewing platform at "The Tumps" beside the towpath and viewing across to Hazel's Holding and Reed Bed North.
Signage boards to deter access across the gates at the Splat bridge unofficial access point	Aiming to explain importance of area on the first gate and that access is along the canal path. Putting the landscape in context and request co-operation. Second sign would be more direct sentiment around "no access" "keep out"
Raise bund in Saltmarsh to improve water retention in Slimbridge	Could be bolted onto another project where clay could be won. Raising current bund on Frampton Estate a few inches would help retain water at the Northern end of Slimbridge too.

Remedial works to the bed of the river Cam in Saltmarsh and The Ryalls	Minor works are required to deal with a couple of settlement issues beside the driftways over the bed of the Cam
Lowering low quality hedge to improve sightlines and reduce predator perches.	Could be rolled up with other scrub/hedge management projects. Possible task for warden if in post otherwise could be contracted. Another option may be to remove the hedge entirely.
Reduction in tree or scrub height along seawall to improve sightlines and reduce	The scrub is a valuable habitat but needs to remain low. In places it has grown above the top of the sea wall. Target for all scrub to be below this. Probably grew up when grazing was too low or absent.
Removal of decayed fencing in Great Meadow and other redundant fencing in wider area.	<del>Linked to potential predation impacts on SPA. Secure reduction in predator</del> opportunity and enables better grazing management and viewing. May reduce physical nuisance to livestock.
Reed habitat channel/choked ditch, with natural pools. Reduce impact of tidal pressure and give protection to the canal and canal banks, slows water flow allowing sediments and debris to deposit.	Would require machinery works and planting of reed rhizome. Potential to need protection from grazing wildfowl during establishment, and from cattle long-term. Fenced along its length. Ongoing maintenance could be covered by warden post or contractors.
Allow succession of vegetation to saltmarsh.	Frampton to advise on "value" of the grazing land although succession is almost certain to occur whatever is done. Saltmarsh vegetation should be better than grassland at stabilising the land as these communities are evolved in these conditions. Needs information from the estate. There would possibly be a reduction in rentable value/grazing which could be off set. Can require additional effort by the grazier to manage stock.
Create lower lying wetland scrapes in all the fields to encourage water birds.	Limited ongoing management required. May need to do a limited amount of maintenance i.e. removal of deposited silt on rotation or creation of replacement scrapes.
Refuge for cattle in Pump Ground	To encourage continued grazing of grasslands/saltmarsh.

Recommendation	Notes
<b>SLIMBRIDGE PROJECTS</b>	
Enhancement of Slimbridge to create hub where access closely controlled. (Projects can be whole or part funded as money also available as match from WWT and Heritage Lottery Fund).	Slimbridge is regarded as one of the honey pot sites within Stroud Districts offering access to the estuary. The WWT reserve is a key site for attracting and controlling significant numbers of visits to the estuary. The work proposed under this project will help manage access during the critical passage season for the SPA wintering bird assemblage. Six roosts of significant interest species assemblages have been identified here in habitats comprising unimproved grassland, pasture and arable fields, sandflats and pools amongst others. This will help relieve any pressure on the quieter refuge areas that support the bulk of the passage assemblage. Visitors will be encouraged to return to Slimbridge for it's fantastic wintering bird experiences too, relieving pressure on wintering birds elsewhere, while not disturbing them at Slimbridge because of the provision of suitable infrastructure. Some of the work will also contribute to better habitat for SPA bird species.
Create a surfaced summer walk to interpret the Estuary and provide access.	Improvements to the summer walk way for visitors and members. This track allows people to walk out to the estuary but will be improved to make it "an access for all" route suitable for wheel chairs and pushchairs etc. Spring and autumn passage birds will benefit from encouraging access in this controlled manner.

Enhanced wildlife corridors to compliment summer walk.	Habitat improvements along the summer walk to improve the visitor experience and add to the attractiveness of Slimbridge as a place to get out onto the estuary. In addition it will provide goose and swan grazing opportunities and habitats for wintering waders.
Shepard's Hut Hide established on the edge of the estuary to provide a hide.	Should attract keen bird watchers and general members of the public too. Provides a chance to explain why sensitive access to the estuary is so important, especially in the winter and is a chance to attract visitors back to the site at other times of the year, reducing access and impacts on less protected areas of the estuary and the SPA features.
Improved access for Land Rover safari's	Drove road access corridor to allow guided Land Rover safari's with a public trailer. Raised track will create better access in poor weather conditions. Smaller loop decrease the time required to provide varied experience thereby allowing additional participants.
Improvements to Ox Piece and Goose House Ground habitat corridor to attract more visitors but also provide additional and better quality habitat for wintering birds	Project is paired with drove road above as habitat corridor creation will provide materials for the construction. The habitat will support a range of species including those that contribute to the SPA wintering assemblage e.g. curlew, redshank, shelduck and teal
<b>Habitat enhancements primarily targeted at improving conditions and available habitat for wintering birds.</b>	Slimbridge is one of the largest areas no public access for the whole SPA. The work proposed under this project will maintain, improve and increase the capacity of the reserve to support a diverse range of SPA bird species such as European white-fronted geese, Bewick's swan, shoveler, and wigeon.
Turkey Oak removal	Removal of non-native planted trees to improve habitat for wintering birds, increasing the area of suitable grazing away from edge effects and removing tree line that creates further edge effects. Significant increase to the improved grazing pasture favoured by the European white-fronted geese and Bewick swans.
Goose pasture paleo channel enhancement	Diversification if the fields used by the wintering birds will provide additional feeding opportunities and improved habitat for the SPA assemblage.
Northern Bund and corridor through Bull Ground	Enhances ability to control water and provide higher drier access areas to for cattle management /grazier access. Management of grazing livestock is critical for maintaining suitable conditions for wintering birds.
Modifying the sward in the Bull Ground to produce herb rich pasture to provide additional suitable goose grazing.	Turf striping and reseeding.
Cattle handling facilities Cattle numbers, timing of grazing and availability of manure are key to managing the habitats but have become harder to secure. Improved facilities are required to deliver this in the long-term	Cattle handling facilities Cattle numbers, timing of grazing and availability of manure are key to managing the habitats but have become harder to secure. Improved facilities are required to deliver this in the long-term
Additional cattle shed to house 50-70 cows.	We need the security of being able to house all the cattle required for effective grazing management on site.
Provision of manure handling facilities	We need to be able to store, move and spread manure effectively. To provide the grass sward desired by the grazing birds within the wintering SPA assemblage.
Wetland treatment system	Sustainably deal with farm run-off water. System will include soft engineered vegetated wetlands and pools. Infrastructure is required to support the housing of cattle and manure. Without which securing suitable



	grazing and appropriate management for the SPA is problematic.
Fencing of livestock paddock including internal control structures to enable safe herd management	The barns and farm infrastructure need to allow a single farmer to manage his for movements on and off the reserve and routine veterinary procedures. Without which securing suitable grazing and appropriate management for the SPA is problematic.
	Extending the current barn to provide sufficient straw bedding for the increased number of cattle and provide housing for farm machinery. Required to support on-going management of the cattle and other habitat management activities e.g. topping and cutting fields.
	Improving access around the farmyard and between buildings makes grazier acquisition and retention more likely. The farm needs to work as a viable single livestock unit. Without which securing suitable grazing and appropriate management for the SPA is problematic.

Recommendation	Notes
<b>SHARPNESS DOCK &amp; PURTON PROJECTS</b>	Sharpness Dock is regarded as one of the honeypot sites within Stroud Districts offering access to the estuary. The docks are owned and managed by Canals & River Trust. The work proposed under this project will help manage access during the critical passage and overwintering seasons for the SPA bird assemblage. This will help relieve any pressure on quieter refuge areas elsewhere on the estuary e.g. Berkeley Pill. Area comprises couch dominated grassland and reedbed on accreted estuarine mud. North of SARA is an area key to Wigeon and Mallard with possible primary roosts for Pintail, Snipe and Spotted Redshank
Improvements to access, infrastructure and provision of engagement materials	Aim is to encourage visitors to use this locality as one of the honey pot sites for the estuary. May require car-parking infrastructure, path repairs and management, improved way marking and interpretation boards.

Recommendation	Notes
<b>SEVERN BERKELEY SHORE</b>	This area has identified high tide roosts g the critical passage and overwintering seasons for the SPA bird assemblage. It comprises a variety of habitats including mudflats, boulder shore, tidal channel, saltmarsh, and salt tolerant grassland. The tidal channel provides a significant area of slack water and sheltered shoreline for wildfowl and waders to roost. Berkeley Pill is a primary roost for Wigeon and Snipe with possible primary roost for Redshank.. Disturbance from dog walkers and wildfowlers.
Explore potential of re-routing path away from Berkeley Pill or provide alternatives to ease disturbance pressure	

Recommendation	Notes
<b>OTHER ACTIVITIES ALONG SEVERN ESTUARY MARGINS IN STROUD DISTRICT</b>	The work proposed under this project will help manage access during the critical passage and overwintering season for the SPA bird assemblage. The aim will be to relieve recreational pressure on the quieter refuges areas throughout the estuary.
Advice to and work with landowners and contractors on how to increase the suitability and capacity of new habitats and infrastructure.	Part of warden's role or secondment of relevant staff from GWT or WWT. Number of days will depend on which projects are being undertaken and level of input required.
Wardening /Visitor Engagement	Potentially short-term (c.10 years). Includes office and vehicle costs. (but some of warden time may end up focussed on existing impacts) warden could undertake all the tasks below and many of the annual management tasks in the projects above.
Joint partnership leaflet	Could be available from leaflet stands in various locations including; visitor infrastructure at Slimbridge, adjacent to graphics boards, Saul Junction visitor centre etc
Improved Access Investigate feasibility to create circular walks from the canal which include good views of the estuary and or access to "waters edge" in less sensitive and /or honey pot locations . Target up to 3 areas for feasibility	Could consider routes that are current public rights of way or new routes. On the latter could require all dogs on leads. May even be an option to provide a "permitted" walk for locals in certain areas e.g. options for Frampton residents to access seawall.
Refuge Areas. Identify additional areas where modifications could be made to protect the SPA assemblage from disturbance.	Would be good to be able to consider options both on and off the designated site. e.g. projects further inland on areas which provide roosting and/or feeding for species within the assemblage. Subsequent project delivery is currently un-costed as dependant on opportunities.
Continued monitoring of levels of usage	Most of the counts every five years, undertaken by warden staff. Budget for automated counters and casual staff/consultancy support as required and included as an annual figure
	Visitor questionnaire work undertaken every 5 years (i.e. annual budget of £1000 equates to £5000 every 5 years).
Monitoring of wildfowl high tide and medium land roosts.	Small annual fee to ensure data collated by local co-ordinators
Disturbance monitoring	Could be undertaken at set intervals - e.g. every 10 years or on an annual basis
Parking Locations	Depends entirely on outcome of the review. £20000 would allow one or two small projects to probably be achieved. NB marking out of car parking spaces may encourage better use of space.
Alternative GI elsewhere?	Potential to provide at adjacent larger strategic allocations at Hunts Grove and West of Stonehouse?

4.2.5 These recommendations were then worked up into agreed and deliverable projects identified in Table 1 of this report from the period Spring to Winter 2017. Nevertheless the Strategy projects and costs should be kept under regular review to take account of any wider symbiotic relationships with other key species and habitats, changing land management practices, bird population food and shelter needs, and deliverability timescales working with our stakeholders.



Salt Marsh along the River Severn

## 5. Mitigation Strategy Framework Implementation

### 5.1 Delivery

- 5.1.1 The challenge with the strategy is that it needs to provide for the mitigation measures necessary to address the in-combination impacts of a range of development (including many small developments) spread over a wide area and coming forward over an extended time period.
- 5.1.2 A strategic approach that is plan led should enable impacts to be avoided where possible, and adequately mitigated for where the pressure cannot be diverted. A strategic approach for new growth should provide timely measures so that they are in place and functioning in line with growth coming forward, and therefore prevent harm from occurring. Such measures are often particularly difficult to secure where there are numerous, small developments likely to come forward. This strategy offers a package of measures to avoid and mitigate for the potential impact is planned, is fit for purpose, capable of implementation and fully committed to. Stroud District Council will administer the finances and ensure compliance with the Strategy acting as

the competent authority taking forward the local plan and authorising the development projects.

- 5.1.3 However, within this there needs to be an inbuilt level of flexibility to adapt, particularly in light of monitoring findings, in recognition of the fact that further information and opportunities will emerge. Access patterns may change over time, and new recreational activities may become more prevalent. Whilst declines in some SPA, SAC and RAMSAR interest features are known, there are some aspects that are not fully understood, and as the way in which the sites are used changes over time, threats and potential impacts on the birds and habitats may also change.
- 5.1.4 It is envisaged that a conservation partnership will be set up to oversee the whole project and to react to any changes necessary as monitoring or other new information emerges. Some mitigation measures (e.g. enhancement of alternative sites) will depend on the response of private landowners. Such a partnership approach has been successfully implemented for the Rodborough Common SAC in the District. Within the strategy there is potential for measures to be developed in detail at a later stage, or modified in reaction to new information. Initially, there needs to be momentum behind the implementation of measures that are urgent and/or those that are easily implemented, in order to have confidence that measures are in progress. This was a point of learning from the Rodborough Common SAC Mitigation Strategy. Similarly having a flexible list of mitigation measures where for some time the approach has been based on an initial costed list of measures which is used to set a tariff that goes into a central funding pot. Proposals and bids are then put forward by partners to use this money and agreed by the conservation panel. Ultimately the competent authority makes the decision on spending projects. It is recognised that changes in land management or ownership, wider green infrastructure or visitor management initiatives, remediation and regeneration projects, national funding of farming, lottery funding, industry led funding schemes or changes in focus within partner organisations could provide additional opportunities.
- 5.1.5 As with Rodborough Common, this Strategy is based upon a tariff based on the overall quantum cost of measures required for the level of new development coming forward, and this tariff calculated on a per house contribution. The partnership would then collect and allocate funds according to proposals that come forward. Alongside the initial commencement of the scheme, there is continued work to improve the detail of the projects, get the monitoring established and continually review opportunities for refined or additional measures. This approach would allow projects to be developed locally, collectively, and carefully planned to ensure success, encouraging proactive development of measures by all partners, and maintaining a best value approach, whilst continuing to ensure that the funding was being allocated to measures that were appropriate.
- 5.1.6 The proposed projects of the strategy are set out in Sections 1 and 4. This Mitigation Strategy is based on evidence which supported the Adopted Local Plan 2015 and the commitments therein supporting Delivery Policy ES6. The Strategy does not address potential future cross boundary approaches to mitigating the impacts of growth across the whole Estuary that may come forward or be necessary in the future. Those cases may have to be considered on their own merits and on a case by case basis by the relevant authorities involved.



Reedbed Creation at Saul Warth

## 5.2 Mitigating Impact

5.2.1 Competent authorities are responsible for securing any mitigation necessary to prevent adverse effects on European site interest features, but the mechanisms by which such measures are funded is a decision for the competent authorities, and there may be a range of options for funding some of the initiatives. Primarily however, developer contributions form the main source of funding when avoiding and mitigating for the effects of new development, and follow a principle of each development proportionately mitigating for its own potential impact.

5.2.2 There are two main mechanisms for delivery of impact mitigation:

- on-site provision or
- off-site provision via a financial contribution.

Off site provision is delivered through a S106 agreement. This Strategy is directed specifically towards residential proposals and the measures, which can be taken to enable them to proceed without harm to the integrity of the protected Severn Estuary SPA/SAC/Ramsar. Whilst it may be possible for larger developments to demonstrate that they can mitigate the impacts of the development by providing on-site mitigation measures (for example, alternative recreation areas), most development within the catchment area will be of a small scale. To enable these proposals to demonstrate that they will not harm the designated area of the Severn Estuary, it is proposed that they will be able to contribute financially to the implementation of the specific projects set out in the Strategy agreed to mitigate impacts identified as arising from particularly

residential growth in the remaining Local Plan period 2018-2031. The cost per net dwelling will be £385 based upon the cost of the projects shared amongst the total amount of development within the catchment zone. It reflects the precautionary principle and the need to consider the “in combination” effects of development. Payment if chosen would be through a unilateral undertaking (as per Rodborough Common SAC). The Strategy applies to all proposals for new net residential development in the following classes of development whether full or outline planning permission:

- Proposals for 1 or more net new dwelling units (including studios or individual bedsits within Houses in Multiple Occupation) falling within Use Class C3: residential development
- Proposals for 1 or more net new units of staff residential accommodation associated with Use Classes C1 and C2.

Replacement dwellings will not generally lead to increased recreational pressure, and therefore, will have no likely significant effect on the SPA/SAC/Ramsar and will not be required to make a contribution to the provision of avoidance measures. All other applications for planning permission in the vicinity of the Severn Estuary will need to be subject to a Habitats Regulations assessment to ascertain whether they are likely to have a significant effect (individually or in combination with other plans or projects); and where it is necessary for a full Appropriate Assessment to be undertaken. The Council’s duty to consider the impact of development on this SAC/SPA/Ramsar applies also to non-residential development applications which will need to be considered on their individual merits.

- 5.2.3 The implementation of the Strategy will be delivered by the Council in consultation with key stakeholders. This model exists for Rodborough Common where a Conservation Panel meets quarterly to discuss the phasing and spending aspects of that mitigation fund for the identified projects within that Strategy. On Rodborough SAC there are individual planning obligations, commonly referred to as a Section 106, or ‘S106’ as they are planning obligations as set out in Section 106 of the Town and Country Planning Act 1990. The alternative option, applies only to large developments, which may be able to provide mitigation measures as part of the development or implement identified projects within this Strategy themselves. This approach using stakeholders which includes the landowner, Natural England, local Wildlife and Conservation Groups and the Graziers has proved successful in securing agreed implementation of those identified projects in that Strategy. The project costs and the calculation of necessary financial contributions should also be reviewed on a regular or an annual basis.
- 5.24 The level of the contribution proposed here is provided by the total cost of projects / number of dwellings expected in the 7.7km Catchment Zone in the remaining current Local Plan period 2018-2031.
- 5.25 Therefore, those applications that are currently waiting to be determined will be offered the opportunity to make off site S106 contributions. These will be ‘banked’ by SDC and may be drawn down to facilitate implementation of the projects set out in this Strategy.

5.2.6 Residential evidence comprising windfalls and allocations as at 01.12.2017 is given in the table overleaf. This evidence shows that 1795 dwellings are anticipated within the 7.7km Core Catchment Area.

2018-2031					
Parish	Small windfalls 2021-31	Large windfalls 2021-2031	Garden sites 2021-2031	Allocations/Large sites 2018-2031	Total 2018-2031
Alkington	6	0	1		8
Arlingham	4	0	1		5
Berkeley	22	0	7		29
Cam	39	0	45	129	213
Coaley	3	0	3		6
Dursley	45	26	15		86
Eastington	6	9	1		15
Elmore	3	0	0		3
Frampton On Severn	13	0	0		13
Fretherne With Saul	4	0	0		4
Frocester	0	0	0		0
Ham And Stone	6	15	4	300	325
Hamfallow	8	0	0		8
Hardwicke	2	0	1	700	702
Haresfield	1	0	0		1
Hinton	14	0	8		21
Leonard Stanley	-1	-3	1		-2
Longney	5	0	0		5
Moreton Valence	0	0	0		0
North Nibley	7	0	0		7
Slimbridge	8	0	5		13
Standish	5	0	0	146	151
Stinchcombe	6	0	2		8
Stonehouse	71	96	8		175
Whitminster	0	0	0		0
<b>Total</b>	<b>276</b>	<b>144</b>	<b>100</b>	<b>1275</b>	<b>1795</b>

5.2.7 The level of the contribution proposed here is provided by the total cost of projects / number of dwellings expected in the 7.7km Catchment Zone in the remaining current Local Plan period 2018-2031. This calculation is therefore £690,854 divided by 1795. The financial contribution per new net dwelling will therefore be £385. Those applications that are currently waiting to be determined will be offered the opportunity to make off site S106 contributions. The financial contribution per new net dwelling will be £385. Planning applicants for new houses within the catchment area can choose either to pay this financial contribution towards off-site delivery of projects identified within this strategy (recommended for small sites), or can carry out their own HRA to assess what projects can be delivered by the development on-site (recommended for appropriate larger sites).

5.2.8 Additional funding opportunities outside those projects identified here may be sought, however those will not be anticipated to mitigate the impacts of development but instead to improve the overall condition of the Severn Estuary SPA/SAC/Ramsar. If additional funding were to be secured from other sources for the identified projects here, this could reduce the contribution required from development. Developer contributions can also be used to financially pump prime project implementation or indeed to secure potential match funding. In both cases these options will be kept under regular review by a future stakeholder board and the District Council. Where necessary, through a review, changes may have to be made to the level of developer contribution. It is important to note that other funding sources could also be the best way of also securing habitat management within the SAC/SPA/Ramsar (which falls outside the role of mitigation). Other funding sources could include local NGOs, Heritage Lottery Fund, for example.



Managed Field Drainage Systems offering wildfowl habitat.





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