

Annex 2 – Improvement Programme for England’s Natura 2000 Sites (IPENS) evidence projects

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 001	Setting the standard for Natura 2000 Diffuse Water Pollution Plans	Good practice for Diffuse Water Pollution (DWP) Planning & delivery is best led by example. This project focuses on a small sample of Natura 2000 / SSSI sites which will be ‘fast-tracked’ to provide exemplar / model plans, which clearly identify actions needed backed up by evidence and set a clear plan of how to achieve favourable condition in relation to DWP.	Setting the standard for Natura 2000 Diffuse Water Pollution Plans	Informs the content of the Diffuse Water Pollution Theme Plan in terms of outlining good practice in creation of DWP plans
IPENS 002	Healthy Estuaries 2020: Towards addressing coastal squeeze in estuaries	Coastal squeeze is an issue affecting many estuaries in England, particularly in the south and east of the country. To address coastal squeeze much work has been done with the Environment Agency. The evidence needs to inform this are complex and challenging, and the approach to replacing extent of lost habitat needed to be reviewed in the light of a greater focus on achieving a more sustainable estuary form. This project works to develop a method that will enable the evaluation of estuary morphology in Natura 2000 sites and inform future planning for habitat creation.	Setting the standard for Natura 2000 Diffuse Water Pollution Plans	Informs the content of the Coastal Squeeze Theme Plan in terms of evaluating estuary morphology in Natura 2000 sites and informing future planning for habitat creation
IPENS 004	Lower Avon Valley macrophyte survey	This project assesses the response of the river macrophyte communities to the cessation of annual weed cutting by the Environment Agency in 2010. The survey focuses on the Lower Avon River, and uses a repeatable and robust methodology designed to produce baseline data to provide evidence for assessing changes within the site and to enable monitoring of any future changes. Details on any obvious problems with water availability or other issues, such as non-natives, excessive siltation, or impact of the plant community on the river’s channel and flow were noted during the survey.	Setting the standard for Natura 2000 Diffuse Water Pollution Plans	N/A

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IPENS 005	Dubbs Beck Restoration Project. Water Quality and Substrate Monitoring (River Kent SAC)	Dubbs Beck, part of the River Kent SAC, contains the only population of freshwater pearl mussels on the SAC. Water quality monitoring is essential to help inform any future remedial action required to improve conditions in Dubbs Beck both for the remaining freshwater pearl mussels and before those in captivity can be returned	Provides an assessment on suitability of the site for both the remaining freshwater pearl mussels found there and for the suitability for re-introducing mussels from the captive breeding programme. Also makes recommendations for future monitoring and management requirements for this feature.	N/A
IPENS 008	Meeting local evidence needs to enable Natura 2000 Diffuse Water Pollution Plan Delivery	Using outputs from Diffuse Water Pollution (DWP) 2012 / 13 evidence review project, this project targets survey and modelling work across a suite of Natura 2000 / SSSI sites which have the DWP remedy where evidence gaps have been identified as a barrier to progressing achievement of favourable condition.	Fill evidence gaps identified across a suite of Natura sites / SIPs which have DWP as a mechanism	Inform the content of the Diffuse Water Pollution Theme Plan in terms of outlining evidence needs to enable DWP plan delivery
IPENS 009	Humber Estuary clay pits water quality monitoring	Within the Humber Estuary Special Protection Area (SPA), several of the Humber Clay Pit lakes are failing nutrient targets for phosphate, causing undesired effects such as blooms of toxic algae and reduced water quality. This study develops a conceptual model of the hydrological system in order to better understand the water and nutrient sources and pathways into the lakes within the study area. This is followed by a targeted monitoring programme assessing water quality and bed sediment quality.	Identifies the key drivers affecting the feature condition of the SPA and SSSI units. Also informs future management and monitoring recommendations.	N/A

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 010 and IPENS 037	Teesmouth and Cleveland Coast SPA Intertidal Project: Nutrient Level and Benthic Habitat Monitoring	The project investigates issues affecting the Teesmouth & Cleveland Coast SPA and the Tees Estuary Heavily Modified Water Bodies, which is currently failing to meet Good Ecological Status for a range of reasons including Dissolved Inorganic Nitrogen and the extent of algal mats on the designated intertidal. The project sought to provide an updated baseline on the quality of intertidal habitats and algal mat extent, and to assess these against historic data to determine any trends in water quality-related impacts. The surveys involved intertidal core sampling to assess benthic communities and particle size analysis, and measurements of algal mat extent, thickness and biomass. Work involved taking sediment cores and analysing them for water quality at previously unsurveyed mudflats within the SPA.	Provide up-to-date data to identify / confirm water quality related impacts affecting Teesmouth and Cleveland Coast SPA	N/A
IPENS 012	Alde-Ore and Butley Estuaries SAC	A National Vegetation Classification (NVC) survey of Alde-Ore and Butley Estuaries, and Orfordness-Shingle Street Special Areas of Conservation (SACs) to provide evidence for assessing changes within the site and to be able to monitor future changes. Details on management, habitat quality, and issues currently impacting on, or with the potential to impact on features were recorded.	Provide evidence to inform condition and identify / confirm threats for Alde-Ore Estuaries.	N/A
IPENS 013	Minsmere-Walberswick Heaths and Marshes SAC	A National Vegetation Classification (NVC) survey of part of Minsmere-Walberswick Heaths and Marshes Special Areas of Conservation (SAC) covering Walberswick National Nature Reserve (NNR) to provide evidence for assessing changes within the site and to be able to monitor future changes. Details on existing management regimes were noted in order to assess whether current management is appropriate. Any management issues currently impacting on, or with the potential to impact on features were recorded and recommendations made for addressing these.	Provide evidence to inform condition and identify / confirm threats and management recommendations for Minsmere to Walberswick Heaths and Marshes	N/A

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 014	River Wye SAC native crayfish survey	A native crayfish survey of reaches of the River Wye Special Area of Conservation (SAC), which is underpinned by the River Wye and River Lugg Sites of Special Scientific Interest (SSSI) was carried out in order to provide information on the presence and current status of white-clawed crayfish populations. Habitat appraisals of suitability for white-clawed crayfish were carried out and existing or potential barriers to upstream migration within the watercourse were recorded.	Provide an up-to-date White Clawed Crayfish survey to inform current condition of the site and identify current management and any issues.	N/A
IPENS 016	Dark Peak (Peak District Moors SPA)	Produces an ArcGIS tool that allows interrogation of feature interest or geographic (SSSI) unit to display specific conservation objectives in order to help identify "management headlines" on a unit by unit basis.	Enables interrogation of feature interest or geographic (SSSI) unit to display specific conservation objectives in order to help identify "management headlines" on a unit by unit basis.	N/A
IPENS 017	Bowland Fells SPA Lesser black-backed gull survey 2013	The project carried out a census of lesser black-backed gull bird number in order to provide data on population levels, consistent with previous surveys, in order to monitor population trends and provide evidence on the need to introduce reductions or temporary moratoria on culling in order to achieve favourable condition.	An up-to-date census to provide population trend data which will inform management requirements for Bowland Fells SPA	N/A
IPENS 018	Fal and Helford SAC Maerl bed surveys	Fal and Helford monitoring and mapping of maerl beds. The project looked at the extent and distribution of maerl bed communities and the species composition.	Provide evidence to inform condition and identify threats such as invasives or anthropogenic impacts for Fal and Helford	N/A
IPENS 021	Drigg Coast SAC intertidal surveys	An intertidal survey was commissioned for Drigg Coast Special Areas of Conservation (SAC) in order to gather data on the distribution, extent and range of communities in the intertidal mud and sand flats habitats within the site to provide evidence for assessing changes within the site and to be able to monitor future changes. Anthropogenic influences on the site's features were also recorded.	Assesses extent and condition of intertidal sediments in the Drigg Coast SAC to provide a baseline to assess whether there is a difference in the condition of particular attributes over time and where subject to differing pressures. The survey identifies, where relevant, anthropogenic influences impacting on features.	N/A

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IPENS 022	Ribble and Alt Estuary SPA. Intertidal sediment condition monitoring	An intertidal survey was commissioned for sections of the Ribble and Alt Estuaries Special Protection Area (SPA), in order to gather data on the distribution and extent of sediment types and faunal communities within the intertidal flats, and to record any anthropogenic pressures observed which could potentially impact on features within the intertidal zones. Data gathered will provide evidence for assessing changes within the site and should be used to monitor future changes.	Provides an assessment of whether there is a difference in the condition of particular attributes over time and where subject to differing pressures. The survey identifies, where relevant, anthropogenic influences impacting on features.	N/A
IPENS 023	Wetland Natura 2000. Norfolk Valley Fens SAC The Broads SAC	Baseline survey to map location of features and management interventions.	Provide evidence to inform condition and management requirements	N/A
IPENS 024	Breckland SAC Norfolk Valley Fens SAC	Baseline survey to map location of features and management interventions.	Provide evidence to inform condition and management requirements	N/A
IPENS 025	Exe Estuary SPA. Predicting the mussel food requirements of oystercatchers in the Exe Estuary	This project assesses the mussel food requirements of oystercatcher in the Exe Estuary SPA. The overwintering oystercatcher population of the Exe Estuary has been well-studied, and the birds are known to feed predominantly upon mussels in intertidal areas. There have been recent declines in the population size of oystercatcher in the Exe Estuary, the reasons for which are unknown. The project developed an individual-based model to predict the food requirements of oystercatchers; and whether there is / could be any effect on oystercatcher survival of the current / potential future ways of managing the mussel fishery on the Exe Estuary.	Within the Exe Dawlish SIP the project provides evidence for mussel food requirements for Oystercatchers. Informs Actions around regulation work for fishery operations and management requirements for managing fisheries in a sustainable way.	N/A
IPENS 026	The Wash and North Norfolk Coast SAC saltmarsh surveys	A National Vegetation Classification (NVC) survey of the North Norfolk Coast to provide evidence for assessing changes within the site and to be able to monitor future changes. Details on management, habitat quality, and issues currently impacting on, or with the potential to impact on features were recorded.	Provides an up-to-date map of saltmarsh plant communities within the SAC and identify any issues impacting on the site, such as trampling, rabbit grazing.	N/A

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IPENS 027	The Wash & North Norfolk Coast SAC saltmarsh surveys	A National Vegetation Classification (NVC) survey of The Wash to provide evidence for assessing changes within the site and to be able to monitor future changes. Details on management, habitat quality, and issues currently impacting on, or with the potential to impact on features were recorded.	Provides an up-to-date map of saltmarsh plant communities within the SAC and identify evidence of management / grazing / pollution / landward constraints and drainage.	N/A
IPENS 030	Berwickshire and North Northumberland SAC Impact of potting activity	This project adds to the evidence base by investigating the long-term impacts of parlour potting on epibenthos and habitat within the Berwickshire & North Northumberland Coast European Marine Site	Explores the relationship between the intensity of potting activity effects on biotopes / substrates at selected sites within the SAC, mainly focused on the sublittoral rocky reef features with the aim to inform fisheries management on the site.	May have wider applications to other sites where similar activities are taking place. May feed into Coastal recreation and disturbance Theme Plan
IPENS 031	Berwickshire and North Northumberland Coast SAC Intertidal rocky reefs survey	A survey of the littoral reefs within the Berwickshire and North Northumberland Coast SAC to provide evidence for assessing changes within the site and to be able to monitor future changes. Details on issues currently impacting on, or with the potential to impact on features were recorded.	Provides up-to-date data on the intertidal rocky reefs and to identify potential changes which may be linked to climate change or other impacts.	N/A
IPENS 032	An investigation into the nutrient levels of Breckland SAC fluctuating meres	Following aquatic and terrestrial surveys in 2011 elevated nutrient levels were detected in some of the Breckland meres. Nutrient enrichment is widely acknowledged to be the most significant pressure affecting lakes in England. This study was commissioned to assess the scale of the nutrient problem and possible causes, and to put forward management options for resolving the issue. As variations in nutrient levels within the meres may simply form part of the natural cycle, a further outcome from the study was to gain a better understanding of how the system functions.	Assesses elevated nutrient levels and informs possible management options. In addition gain a better understanding of the natural variations in nutrient levels within the meres.	N/A

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 034	River Mease SAC Diffuse Water Pollution source identification and Phosphate bio-availability	Project investigates sediment sources and pathways in the River Mease SAC and its tributaries, in terms of broad land-use types. This includes catchment walkover to identify specific source locations, and assessment of bioavailability of Phosphate within the sediment. Recommendations for impact mitigation; land management actions; and further investigations and surveys were noted.	Provides evidence regarding water pollution source identification and phosphate bio-availability in the River Mease SAC. Informs recommendations for impact mitigation; land management actions; and further investigations and surveys.	N/A
IPENS 035	North East Kent (Thanet Coast SAC) Distribution of selected non-native species within the intertidal zone	This project monitors the distribution of non-native species within the intertidal zone and records the impact on native species and habitats. The work included the monitoring of established Pacific oyster transects, and well as monitoring the interaction between this species with common mussels and <i>Sabellaria spinulosa</i> . The project also reviewed a one-year Pacific oyster control trial and assessed the feasibility of controlling wild Pacific oysters at selected locations within the inter-tidal zones using volunteer labour.	Provides distribution and recruitment data for pacific oysters and other invasive species within Thanet Coast SAC, which informs where monitoring / management efforts need to be focused for future years. Assesses feasibility of control methods.	N/A
IPENS 038	Deben Estuary SPA	A National Vegetation Classification (NVC) survey was commissioned for Deben Estuary Special Protection Area (SPA) to provide evidence for assessing changes within the site and to be able to monitor future changes. Details on existing management regimes were noted in order to assess whether current management is appropriate.	Provides evidence to inform condition and identify / confirm threats for Deben Estuary SPA	N/A
IPENS 039	Minsmere-Walberswick Heaths And Marshes SAC	A National Vegetation Classification (NVC) survey was commissioned for part of Minsmere-Walberswick Heaths and Marshes Special Areas of Conservation (SAC) and Minsmere-Walberswick Special Protection Area (SPA). The survey, covering SSSI units 35, 107 and 108, aimed to provide evidence for assessing changes within the site and to be able to monitor future changes. Details on existing management regimes were noted in order to assess whether current management is appropriate.	Provide evidence to inform condition and identify / confirm threats for Minsmere to Walberswick Heaths and Marshes	N/A

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 041	<i>Spartina anglica</i> and its management in estuarine Natura 2000 sites: an update of its status and monitoring future change in England	This project aims to improve the understanding of the role of <i>S.anglica</i> and potential negative or positive impacts on other intertidal Annex I habitats or their sub-features. It focuses on assessing the current extent of <i>S.anglica</i> in different Natura 2000 sites where it is thought to be either expanding, dying back, undergoing conservation or amenity management, or where it appears to be stable.	Provides site specific information of estimates of the extent and distribution of <i>Spartina anglica</i> across Natura 2000 sites within England.	Inappropriate Coastal Management Theme Plan. Provides an understanding of the role of Spartina and under what circumstances its presence may pose a risk to the achievement of favourable condition for other features of Natura 2000 sites. Also provides updated guidance on monitoring and the types and appropriateness of management measures.
IPENS 042	The extent of vegetation burning in the English uplands Natura 2000 sites	The assessment of the extent of rotational burning of vegetation in the English uplands to inform decision making following Evidence Review of burning on blanket bog.	Provide up-to-date data of extent of rotational burning for upland Natura 2000 sites.	N/A
IPENS 043	The intensity of rotational burning in the North Pennines Natura sites	Identifying in detail, the extent of rotational burning of habitats in the North Pennines.	Provide up-to-date data of extent of rotational burning for SIPs covering the North Pennines	N/A
IPENS 044	Eco-hydrological characterisation and investigation of hydrological function and impacts on Norfolk Valley Fen SAC	The purpose of this project is to review existing information, identify pressures and threats, recommend critical short-term management actions (eg drain in-filling), identify where further investigation is required, and consider the longer-term actions necessary to sustain the wetland features in the long-term, such as boundary extension and linking of existing sites.	For Norfolk Valley Fen, it provides a review of existing information; identifies pressures and threats; recommends management actions and identifies further investigations required to sustain the wetland feature in the long-term.	Links with Hydrological Functioning Theme Plan. Report is In line with the theme plan approach.

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 045	Vulnerability of freshwater Natura 2000 sites to invasion from invasive non-native species	This project looks at the vulnerability of protected sites to the introduction, establishment and spread of invasive non-native species (INNS) and (potential) impact on site condition and develops a decision making tool to identify priority actions to safeguard and improve freshwater designated sites threatened or currently affected by INNS.	The database created can be used to identify potential transmission routes and known distribution of high risk species for all N2K sites where invasive species are recorded as an issue.	Informs Invasives theme plan. Looks at the vulnerability of protected sites to the introduction, establishment and spread of INNS and (potential) impact on site condition and develops a decision making tool to identify priority actions to safeguard and improve freshwater designated sites threatened or currently affected by INNS
IPENS 046	Understanding the impacts of invasive non-natives species (INNS) on protected sites	The aims of this project were to:	Provide up-to-date data of extent of rotational burning for SIPs covering the North Pennines	N/A
IPENS 047	Investigating changes to bird populations on the Humber Estuary SPA	There is increasing evidence suggesting that populations of many of the nationally and internationally important wintering and passage bird species within the Humber Estuary Special Protection Area (SPA) are in decline. With a few exceptions, the reasons for these declines are not clear cut. The Humber Estuary Bird Decline project was commissioned to bring together findings from a wide range of studies to identify drivers of waterbird population change on the Humber Estuary, where possible, and to make recommendations about measures that could be taken to halt or reverse these trends.	Provides up-to-date data for Humber Estuary SPA and should be used to inform management requirements on the site.	May have wider applications for other coastal sites by identifying drivers of waterbird population change, and to make recommendations about measures that could be taken to halt or reverse these trends. Feeds into the Public access / disturbance theme plan.

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 048	Investigating changes to bird populations on The Wash SPA	There is evidence suggesting that populations of several species of concern within The Wash Special Protection Area (SPA) are in decline. With a few exceptions, the reasons for these declines are not clear cut. This project was commissioned to bring together findings from a wide range of studies to identify drivers of waterbird population change on The Wash, where possible, and to make recommendations about measures that could be taken to halt or reverse these trends.	Provides up-to-date data for The Wash SPA and should be used to inform management requirements on the site.	May have wider applications for other coastal sites by identifying drivers of waterbird population change, and to make recommendations about measures that could be taken to halt or reverse these trends. Feeds into the Public access / disturbance theme plan.
IPENS 049	Natura 2000 site categorisation for nitrogen measures	The project aimed to evaluate a draft framework for source allocation of atmospheric N pollution and to assess how a more detailed source attribution can contribute to better targeting of measures. The application of this more detailed approach to different types of case study sites under this project aims to give insight into the detail needed for appropriate targeting of measures.	Will provide site specific information for Natura 2000 sites covered by the case studies	Informs the content of the Atmospheric nitrogen Theme Plan. Tests part of the approach developed within the Theme Plan.
IPENS 050	Case studies for effective delivery of nitrogen measures on Natura 2000 sites	Atmospheric nitrogen deposition is considered a key threat to Natura 2000 sites and to the reaching of biodiversity objectives. Ammonia (NH ₃) emissions from agriculture can represent a significant local source of atmospheric nitrogen for protected sites, and encouraging changes in local agricultural practices could lead to substantial reductions in N deposition at these sites. However, there is currently no delivery mechanism specifically aimed at encouraging those changes in the vicinity of Natura 2000 sites. Catchment Sensitive Farming (CSF) represents a potential delivery mechanism for the targeted identification and implementation of mitigation measures aimed at reducing atmospheric nitrogen deposition at Natura 2000 sites, in tandem with efforts for water quality. The aim of this project was to assess the suitability of the CSF approach as a delivery mechanism for potential NH ₃ abatement measures, by investigating its potential at four case study Natura 2000 sites.	Will provide site specific information for Natura 2000 sites covered by the case studies	Inform the content of the Atmospheric nitrogen Theme Plan. Tests part of the approach developed within the Theme Plan.

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 051	A desk-based study to consolidate existing data and literature to help inform the conservation status of Annex II features (migratory fish species) within the Severn Estuary river catchment	In an effort to clarify the nature and location of existing data concerning the migratory fish of the Estuary, this project was commissioned to undertake an extensive a data collation exercise of all available quantitative and qualitative information, to inform future condition assessments. The study also contains an up to date literature review of the ecology and distribution of the three fish species in the River Severn catchment, a discussion of the attributes used to monitor them, threats and pressures on them and suggestions of management measures and monitoring methods.	Will provide site specific information for Natura 2000 sites covered by the case studies	Informs the content of the Atmospheric nitrogen Theme Plan. Tests part of the approach developed within the Theme Plan.
IPENS 052	Bowland Fells Lesser black-backed gull survey 2014	Repeat of last year's survey to provide up to date population trend data to provide evidence on the need to introduce reductions or temporary moratoria on culling in order to achieve favourable condition.	An up-to-date census to provide population trend data which will inform management requirements for Bowland Fells SPA	N/A
IPENS 053	River Mease SAC Road Runoff. Bioavailability of metals and water quality	This project looked at assessment of the impact of road networks on the ecological integrity of the River Mease through establishing a baseline of a suite of metals entering the River Mease channel above and below the main A42 crossing point with the river at Packington, and establishing the bioavailability of metals in these baseline samples.	Provides evidence on the impact of the road networks on the River Mease in order to inform management measures.	N/A
IPENS 054	A desk-based study to determine the condition of and feasibility of management measures for Annex II features (migratory fish species) within the Tamar river catchment	This project was commissioned to appraise the options to improve the passage of Allis shad over Gunnislake Weir on the Tamar Estuary. The study reviews the different options to improve passage over the weir, make recommendations on practicality and likely success of these options and providing costings and steps to progress the preferred option.	Provides details for actions required to improve the passage of Allis shad over Gunnislake Weir on the Tamar Estuary.	N/A

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 055	Burning in the English Uplands	This report covers IPENS 042 and 043 and has two objectives. The first is to provide a summary of the history of rotational burning in the English uplands going back 60 – 70 years. This is to help provide historical context from data on the intensity and scale of rotational burning since World War 2 which can then be compared with rotational burning as is currently practised. The second objective is to interpret the GIS products from the work and place them in a form that can be readily understood by the non-specialist reader.	Provide evidence relating to scale of rotational burning for SIPs covering the English uplands	N/A
IPENS 058	Crayfish survey (Peak District Dales SAC)	A crayfish survey on the upper River Dove, which falls within the Peak District Dales Special Area of Conservation (SAC), was commissioned in order to confirm presence of white-clawed crayfish, a notified feature of the SAC, following crayfish plague outbreaks in 2005 and 2008, which were believed to be 100% fatal.	Feed into the peak district dales SIPs for issues relating to white-clawed crayfish, including management recommendations. (survey was recorded as an Action in the SIP)	N/A
IPENS 060	Border mires 1 - long term monitoring tool	This project looked at designing a long-term, repeatable monitoring tool for Border Mires through designing a Bog Quality Index. This uses a robust, repeatable methodology that will allow long term trends in habitat change to be statistically monitored by all partner organisations and future graduate studies in a comparable way. The methodology has wider implications for the monitoring of other blanket / intermediate mire sites.	Provides a tool to enable long-term repeatable monitoring of the site.	N/A
IPENS 061	<i>Vertigo moulinsiana</i> surveys on SAC sites	Assessment of <i>Vertigo moulinsiana</i> to further strengthen the case for action, based on the observed (in many cases) declines. Will bring together previous reports to seek to demonstrate the scale, nature and extent of observed declines of the species so that the remedies are clearer about the problem they are addressing. It should, for example, more accurately influence the water level monitoring models if losses from particular areas of sites have been noted.	Inform the current status of <i>V. moulinsiana</i> for Stodmarsh SAC; The Broads SAC; Waveney and Little Ouse Valley Fens SAC; and the River Avon SAC. Also includes management recommendations where appropriate.	N/A

No.	Project Name	Project Description	Links to SIPs	Links to Theme Plans
IPENS 063	GCN project	This project looks to: <ol style="list-style-type: none"> 1. Compile examples of best practise site management and issue handling in relation to great crested newts to inform management on the SAC series. 2. To understand the barriers to implementation of best practise and identify solutions to inform management on the SAC series. 3. Assess the status of great crested newts in the New Forest SAC with predictive mapping and the use of remote sensing data. 	Provides best practice guidance for all SIPs with GCNs as a feature. Also provides up-to-date data for the New Forest SAC.	N/A
IPENS 065	Ensor Pool SAC Crayfish Survey	The aim of this project is to determine presence and provide an indication of the size and health status of the white-clawed crayfish <i>Austropotamobius pallipes</i> population in Ensor's Pool SAC	Provides up-to-date data for white-clawed crayfish in Ensor's Pool.	N/A
IPENS 066	North York Moors Merlin project: An analysis of changes in moorland management	This project looks to investigate a potential link between changes in moorland management, particularly rotational burning of vegetation and changes in the distribution of nesting pairs of Merlin within the North York Moors SPA.	Will provide evidence as to the impact of changes in moorland management on Merlins within the North York Moors. Will be used to inform future research / monitoring requirements.	N/A
IPENS 067	Mapping catchment boundaries for N2K sites with Diffuse Water Pollution (DWP) plans	This project is to review and produce where needed accurate surface water catchment boundaries for SSSIs underpinning 38 N2K sites which currently have DWP issues. <ol style="list-style-type: none"> 1. Review the current surface water catchment boundaries and determine which are accurate and which need to be further modified to ensure they are accurate. 2. For those which are not considered accurate, produce an accurate surface water catchment for that designated site. 	Provides accurate surface water catchment mapping for a number of SIPs which have DWP as an issue.	N/A
IPENS 070	Border mires 2 - mapping active ditches	To map remaining active drains within specific mires within the Border Mires, in order to inform future ground works as soon as funds become available within any of the Border Mires deliver partner organisations.	Provides up-to-date mapping of remaining active ditches within Border Mires. Informs actions required to restore mire hydrology.	Links to Hydrological Functioning Theme Plan where it is included as an example approach.

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IPENS 071	Water quality catchment assessment	The water quality model SAGIS has recently been used to help understand the relative importance of different sources of phosphate to N2K catchments. This has been based upon discharges operating at their permit limits rather than at the volumes they are currently discharging. This project will run the SAGIS model for a select 10 catchments using MCERTS discharge monitoring data to allow us to identify where utilisation of permit headroom through growth presents a significant risk to water quality.	Provides data about water quality risks for a number of sites.	N/A
IPENS 072	Border Mires 3 - priority habitat mapping	Baseline vegetation maps were commissioned for 4 priority mires within the SAC complex in order to identify the extents of pristine, degraded and restored interest features. These maps will allow long term monitoring to withstand statistically robust analysis.	Provides up-to-date baseline map for 4 priority mires within the SAC.	N/A
IPENS 073	West midland mosses eco-hydrology investigation (Chartley Moss)	The purpose of the project is to review the ecohydrological status of Chartley Moss through: <ul style="list-style-type: none"> • review of existing reports • mapping of surface drainage and other hydrological features • any necessary re-development of conceptual model • review of impacts on unmodified state & likely necessary restoration measures to achieve something approaching pre-modification state. • Brief comments on possible side-effects of restoration measures 	Provides up-to-date information regarding Chartley Moss. Informs management measures required for restoration work.	Links to Hydrological Functioning Theme Plan where it is included as an example approach.
IPENS 074	Ensor Pool SAC. Crayfish follow up survey	During the winter months, further research to investigate the suitability of Ensor's Pool for White-clawed Crayfish. Examine the feasibility (or not) of a possible re-introduction of white-clawed crayfish to Ensor's pool.	Informs possible options available for management of this site for White-clawed crayfish.	N/A

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<https://www.gov.uk/government/publications/improvement-programme-for-englands-natura-2000-sites-ipens>



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