

Developing UK indicators for the Strategic Plan for Biodiversity 2011-2020. Deliverable 1: Scoping paper

This paper presents the results of the scoping exercise undertaken by WCMC to review and synthesise the metadata used in the UK National Ecosystem Assessment and identify data sets which may be suitable for developing UK biodiversity and ecosystem service indicators.

The Scoping Paper is the first deliverable from the Defra contract *WC1301-Developing UK Biodiversity Indicators 2011-2014* being executed by WCMC and AEA. It is the precursor to a series of options papers identifying and profiling possible new UK Biodiversity Indicators methodologies.

We welcome comments from the UK Biodiversity Indicators Steering Group as to how the scoping paper can inform the options papers.

1. Introduction and rationale

It has been highlighted that despite the collective efforts of the biodiversity conservation community to bring attention to the plight of biodiversity loss, pressures on biodiversity loss are continuing to rise (Butchart *et al*, 2010). Following the 10th Conference of Parties to the Convention on Biological Diversity (CBD) in October 2010 and adoption of the new Strategic Plan for Biodiversity (2011-2020), a flexible Pressure, State, Benefits, Response (PSBR) framework of indicators has been proposed to report on the 20 Aichi targets at multiple scales (UNEP/CBD/SBSTTA/15/INF/6). There is also a widespread perception that alternative tools are needed to mainstream the issues of biodiversity loss across sectors, which has evolved into the discipline of ecosystem services assessment.

The UK has been a global leader in approaching ecosystem assessment in the context of ecosystem services, with the very recent publication of the UK National Ecosystem Assessment (UK NEA) – the first nation to do so. This initiative, combined with the new Biodiversity Strategic Plan (2011-2020) being championed by the CBD, has resulted in timely emphasis on enhancing the UK biodiversity indicator suite to ensure that they continue to be based on the most robust and reliable data, and that they are relevant to the new Aichi Targets as well as the revised European Biodiversity Strategy, including requirements for the Marine Strategy Framework Directive (MSFD) and the Water Framework Directive (WFD).

The UK Biodiversity Steering Group (BISG) has proposed an interim set of 24 biodiversity indicators for reporting against global and European frameworks. A number of the proposed indicators need refinement and/or development and a key challenge will be meeting tight reporting deadlines that have been set, as well as meeting country priorities. To ensure that the UK can meet both international and national obligations, there is an imperative to make best use of data that is currently available.

A major objective of project WC1301 is to provide a comprehensive understanding of the availability of data sets that are suitable for use in robust biodiversity and ecosystem service indicators, at both a UK and country scale for the six thematic areas that have been identified by the BISG as requiring indicator development (Table 1).

Table 1: Proposed delivery dates of option papers and indicator methodologies

Options Paper	Delivery of draft options paper	Delivery of codified methodology
1. Awareness of biodiversity conservation	April 2013	October 2013
2. Status of species and habitats supporting ecosystem services	October 2012	April 2013
3. Habitat Connectivity	October 2012	April 2013
4. Plant Genetic Resources	October 2012	April 2013
5. Climate Change Adaptation	October 2012	April 2013
6. Integrating biodiversity into business activities	October 2012	April 2013

During the lifecycle of the project, indicators will be identified, evaluated and prioritized; and will be presented as options papers with clear methodological guidelines that would enable a third party to calculate each indicator without further research requirements.

The scoping paper is to make a broad (non-exhaustive) review of the comprehensive data set that was compiled for use in the UK NEA and synthesise the metadata in order to identify which data might be suitable for biodiversity and ecosystem service indicator development in each thematic area, map these data sets against the Aichi targets, and identify where gaps may exist in the evidence base. Results are intended to inform and guide subsequent, more detailed data searches and development of indicators for each options paper.

2. Approach

Metadata Record Compilation

Metadata records were created for each of the primary data sets that were used in some of the chapters of the UK NEA Technical Report (UK NEA, 2011): biodiversity (chapter 3), habitats (chapters 5-12), ecosystem services (chapters 13-16) and country syntheses (chapters 17-20). Primary data sets were considered as those that had been presented in some graphical form in the chapter (table, graph, map).

Information on each data set was captured in 41 data fields, covering eight broad categories (Data Characteristics, Temporal Coverage, Spatial Coverage, Data quality and Accessibility, Distribution Information, Data Use, Relevance to CBD Aichi Targets, Contact Details, Notes). A full description of each data field and the codes used to complete each one is provided in the Supplementary Electronic Material (WC1301-SEM-01). Note, where applicable, data fields match the criteria that have been suggested for quality testing indicator options (see Table 2 in the Defra project tender specifications).

Records were completed by extracting information from the original data source, updating and supplementing them, where necessary, with knowledge amassed by UK NEA Secretariat data officers who had been responsible for collating many of the data sets used in the UK NEA.

After initial compilation of the metadata records, data sets underwent a review and refinement: those used in more than one chapter were combined into a single record; those subsequently

considered not relevant to the project were deleted. Therefore, record ID numbers in the full set of metadata records (provided in WC1301-SEM-01) may not be consecutive.

Assessing sub-sets of data available for Options Papers and mapping against the Aichi Targets

A subset of the data fields that would provide an overview of temporal and spatial coverage, availability, and future security of the data sets was selected and the metadata records summarised, so that an initial assessment could be made of what data is available for each of the Options Papers. Each record was also mapped against the most relevant Aichi Target under each of the five CBD Strategic Goals (Mainstreaming, Pressures, Status, Benefits, Implementation), and against the most relevant ecosystem service (Supporting, Provisioning, Regulating, Cultural). Each record was also given a subjective quality score of low, medium and high.

3. Outcomes

A total of 255 metadata records were compiled and reviewed (WC1301-SEM-01). A summary is provided in Table 2. Records have been clustered and coloured-coded according to their likely relevance to individual options papers.

Relevance to the Biodiversity Options Papers

The majority of the data sets are likely to be relevant to the *Status of Ecosystem Services or Species/Habitats supporting Ecosystem services* options paper. Substantial data also relate to those for *Climate Change Adaptation, Habitat Connectivity, and Awareness of Biodiversity Conservation*. However, there is a paucity of data sets that might be useful for *the Integrating Business into Local Decision Making* paper, and only four that relate to *Plant Genetic Resources*.

Ecological System

Most of the data sets cover terrestrial ecosystems; few are available for the marine and freshwater ecosystems. About 10% of the records spanned all three ecosystems.

Temporal Coverage

Many long-term (i.e. >10 years) data sets exist, with starting points clustered around the 1940s-1950s or the 1970s-1990s. However, it should be noted that from the experience of preparing the UK NEA, even though many data sets are collected annually, time-series are not always continuous and/or methodologies may have changed between data collection periods, which creates challenges for conducting statistical comparisons between years (pers obs).

Spatial Coverage

About half of the data sets are collected at the UK or Great Britain level and can be disaggregated by country; although, as for temporal coverage, differing methodologies can make between country comparisons difficult because of the disparate way data is collected and stored in the four UK countries (pers obs). England has the most data sets of the four constituent countries.

Data Accessibility and Quality

Most data sets are available in the public domain or upon request. Although many are available free of charge, strict licensing agreements often apply, which may restrict their use (pers obs). Use of published data sets can incur a nominal fee, while others (e.g. Scottish soil data, some climate data

and agricultural spatial data) attract substantial fees for data access and use (pers obs). Methods for how data is collected and analysed are available (both peer reviewed and non-peer reviewed) for the majority of data sets, although the amount of detail varies substantially.

The quality of most data sets was subjectively assessed as low to medium.

Data security

Anecdotal liaison with UK NEA authors throughout the preparation of the UK NEA (per obs.) has highlighted a widespread lack of confidence that data set collection will be on-going. Therefore, collation of data security information for the present scoping paper was not possible and determining future security of data sets will need further investigation.

Relevance to CBD Strategic Goals and Aichi Targets

As could be anticipated most of the data sets clustered on Target 5 (habitat extent), Target 7 (sustainable agriculture), Target 8 (Pollution) and Target 14 (ecosystem services), as mapped in Table 3.

Table 3: Data sets related to CBD Strategic Goals and Aichi Targets.

Strategic goals/Aichi Targets			Data sets	Strategic goals/Aichi Targets			Data sets
A	1	Awareness	41	C	11	Protected Areas	10
	2	Local development	1		12	Threatened spp	26
	3	Perverse incentives	1		13	Genetic diversity	2
	4	Sustainable production	9	D	14	Ecosystem services	120
B	5	Natural habitat extent	67		15	Resilience / carbon stocks	13
	6	Fisheries	19	16	Access/benefit sharing		
	7	Aqua/agriculture	27	E	17	NBSAPs	
	8	Pollution	39		18	Traditional knowledge	3
	9	Invasive alien spp	1		19	Knowledge/science	2
	10	Anthropogenic pressures	6		20	Resource mobilisation	

4. Next steps

The data collection for the scoping paper was not exhaustive and is intended to stimulate contributions if/when omissions are noticed.

The planned on-line surveys of relevant experts for each thematic options paper is anticipated to yield additional data sets to complement the scoping paper results and will help inform working group discussions during the preparation of the options papers.

5. Contact for scoping paper review comments and contributions

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6. References

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Table 2: Summary of WC301-SEM-01

Data Set ID No.	Data Description	Ecological System			Temporal Coverage				Spatial Coverage				Data Quality and Accessibility				Relevance to Biodiversity Options Papers				Relevance to CBD Strategic Goals & Aichi Targets				Data Quality				
		Freshwater	Marine	Terrestrial	First Data Point	Most Recent Data Point	Data Collection ongoing?	Sampling Frequency	Time Series	England	Scotland	Wales	Northern Ireland	Can Be Disaggregated	Transparency	Method	Fees	Options P1.: Awareness	Options P2.: ES	Options P3.: HC	Options P4.: PGR	Options P5.: CC	Options P6.: Business	Most Relevant Ecosystem Service	SG A.: Mainstreaming	SG B.: Pressures	SG C.: Status	SG D.: Benefits	SG E.: Implementation
009	Area of fully and in-conversion organic land areas			✓	2002	2008	✓	□	□	✓	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	P	4	7				□
418	Designated woodland habitats in Northern Ireland (ASSIs, SACs)			✓			■	□	✓	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C		5				□	
395	Leisure activities in Great Britain	✓	✓	✓	1994	2003	✗	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1					■	
396	Leisure activities in England	✓	✓	✓	2005	2005	✗	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1					■	
397	Monitor Engagement with the Natural Environment (MENE) survey	✓	✓	✓	2009	2012	✓	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1					■	
222	Mapping greenspace accessibility in Edinburgh			✓	2007	2007	✗	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1					■	
236	Visitor spend at sea bird RSPB reserves around the UK		✓	✓	2009	2009	✓	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1					□	
028	Volume of bottled water consumed in the UK	✓			1976	2010	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	P	1		14			□	
104	Visitor use of mountain, moorlands & heath-dominated areas			✓	1974	2002	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		14			□	
215	Density of new dwellings built on previously developed land England			✓	1989	2010	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓		1	5				■	
255	The importance and frequency of use of greenspace in England			✓	2009	2009	✓	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		14			□	
258	Trips per person per year by transport mode in Great Britain			✓	1989	2006	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1					□	
259	Distance travelled per person per year in GB by trip purpose			✓	1985	2006	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1					□	
260	Sports participation at least once a week	✓	✓	✓	2007	2011	✓	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		14			■	
261	Reasons for participation in Learning through Landscapes program			✓	2003	2003	✗	■	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		14			□	
314	Welsh Outdoor Recreation Survey	✓	✓	✓	2008	2009	✗	□	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		14			□	
314a	Visual and sensory evaluation of Wales	✓		✓	2003	2003	✓	■	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		14			■	
426	Estimated resource value of the open space areas			✓	2005	2005	✗	■	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		14			□	
446	Tourism in Northern Ireland from 1959-2009 (visits and revenue)	✓	✓	✓	1959	2009	✓	□	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		14			■	
281	Distribution of forested land in the UK			✓	1924	2000	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S		7				□	
210	Changes in wetland plant species			✓	1990	2007	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓			5				■	
458	National inventory of crop wild relatives - TBC																							7	13				
048	Soil carbon density 0-100 cm under different land-use types, UK			✓	1980	2005	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S			15			■	
347	Potential new primary production for marine areas around Scotland		✓		1960	2000	✗	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S	10		15			■	
007	Energy crop production on set-aside land			✓	2001	2007	✓	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	P	7					■	
011	Landings of finfish and shellfish by UK vessels in UK and abroad		✓		1994	2011	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	P	6					■	
031	Diversity of marine zooplankton communities		✓		1960	2005	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S	10	12				■	
035	Quality of life indicator: population trends of wild birds	✓	✓	✓	1970	2008	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	1		12	19		□	
047	Density of soil carbon in the UK			✓	1980	2005	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R			15			■	
047a	Soil profiles in the UK			✓	1980	2005	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	8		15			■	
070	Conc. of acid neutralising capacity & DOC upland lakes & streams	✓			1989	2010	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	8					■	
088	Winter concentration of soluble phosphorus and chlorophyll a	✓			1960	2008	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	10					□	
098	Exceedance of the critical loads for acidification and eutrophication	✓	✓	✓	1986	2008	✗	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	8					■	
211	Trends in breeding populations of selected wetland birds	✓	✓	✓	1982	2009	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	6	12				■	
212	Trends in populations of wintering water birds in Great Britain	✓	✓	✓	1975	2009	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	C	6	12				■	
230	Trends in lichen diversity in London			✓	1970	2004	✗	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S	8	12				□	
233	Past, present and projected future area of coastal margin habitats		✓	✓	1945	2010	✗	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	5		14			□	
242	Plankton greenness from Continuous Plankton Recorder		✓		1948	2012	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S	8		15			■	
275	Threats to biodiversity in the UK	✓	✓	✓	2005	2008	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S	1			19		□	
285	Condition of Welsh lakes within SSSIs	✓			2010	2010	✗	U	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S	5		14			■	
291	Health and biodiversity of marine habitats in the UK		✓		2005	2010	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S	1	5				■	
297	Net primary production of landcover in Wales			✓	2007	2007	✗	U	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S			14			■	
417	Area and distribution of forests managed by the Forest Service in NI			✓	2010	2010	✗	U	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	5		14			□	
419	Age structure of woodland in Northern Ireland			✓	<1900	2009	✗	□	■		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	S	5					□	
420	Area of new woodland plantings in Northern Ireland			✓	1999	2008	✓	□	■		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	P	7		14			■	
421	River basin catchment area in Northern Ireland	✓		✓	2011	2011	✓	U	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	5					□	
434	Distribution of peat, ESAs, horticultural extraction and windfarms			✓	1990	2010	✗	U	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R			14			□	
438	Carbon in vegetation and soils in Northern Ireland			✓	1998	2009	✗	U	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R			15			■	
453	WFD chemical classification in Northern Ireland	✓			2008	2009	✓	□	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	8					□	
457	TBC																							7	13				
213	UK urban and suburban areas with populations >10000 people			✓	2001	2001	✓	□	□	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓		1					□	
022	Hardwood harvest in Great Britain			✓	1975	2011	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	P	7		14			■	
034	Sustainability of UK marine fin-fish stocks		✓		1970	2010	✓	□	■	✓	✓	✓	■	□	■	□	✓	✓	✓	✓	✓	P	6		14			■	
411	Agricultural Land Classification in Northern Ireland			✓	1997	1997	✓	U	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	P	7		14			■	
423	Size and location of urban areas in Northern Ireland			✓	2005	2005	✗	U	□		✓	✓	■	□	■	□	✓	✓	✓	✓	✓	R	1					□	
425	Planning application approvals in Northern Ireland			✓	2003	2009	✓	□	■		✓</																		

Table 2: continued

Data Set ID No.		Freshwater			First Data Point	Most Recent Data Point	Data Collection ongoing?	Sampling Frequency	Time Series	England	Scotland	Wales	Northern Ireland	Can Be Disaggregated	Transparency	Method	Fees	Options P1: Awareness	Options P2: ES	Options P3: HC	Options P4: PGR	Options P5: CC	Options P6: Business	Most Relevant Ecosystem Service	SG A : Mainstreaming	SG B : Pressures	SG C : Status	SG D : Benefits	SG E : Implementation	Subjective Quality Score
		Marine	Terrestrial																											
430	Commercial salmon catch in Northern Ireland	✓	✓	1994	2009	✓	□	■				✓	□	■	□	□		✓				✓	P	6	14	■				
006	Sheep numbers and wool production in the UK		✓	1866	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P	6	14	■				
002	Area of crops in the UK		✓	1940	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P	7	14	■				
003	Cereal and oilseed areas, yield and production in the UK		✓	1945	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P	7	14	■				
004	Livestock numbers in the UK		✓	1866	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P		14	■				
005	Area of grasslands in the UK		✓	1940	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P	5		■				
010	Landings of finfish and shellfish by UK and foreign vessels		✓	1866	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P	6	14	■				
012	Production of Atlantic salmon from Scottish aquaculture sector		✓	1988	2010	✓	□	■		✓			□	□	□	□		✓					P	6	14	■				
013	Red grouse shot annually on moorland in England and Scotland		✓	1850	2010	✓	□	■	✓	✓	✓	✓	■	■	□	□		✓					P		14	□				
014	Game birds shot annually and released per 100 ha in the UK		✓	1850	2010	✓	□	■	✓	✓	✓	✓	■	■	□	□		✓					P		14	□				
017	Catch of wild salmon by different methods in Scotland	✓	✓	1952	2009	✓	□	■		✓			□	□	□	□		✓					P	6	14	■				
018	Catch of wild salmon & trout by different methods, England & Wales	✓	✓	1956	2009	✓	□	■	✓		✓		■	□	□	□		✓					P	6	14	■				
020	Honey production in England & Wales		✓	1949	2009	✓	▣	■	✓		✓		■	■	■	■		✓					P		14	□				
024	Softwood harvest in Great Britain		✓	1961	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P	7	14	■				
029	Population trends of wild bird species in different habitats	✓	✓	1970	2008	✓	▣	■	✓	✓	✓	✓	■	■	□	U		✓					P	1	12	□				
030	Status and trends in components of UK biodiversity		✓	1970	2009	✓	▣	■	✓	✓	✓	✓	□	□	■	□		✓					S	1	12	□				
036	Population trends of wild terrestrial mammal species in the UK		✓	1982	2007	✓	▣	■	✓	✓	✓	✓	■	□	□	□		✓					S	1	12	■				
038	Number of threatened fungi in Great Britain		✓	1992	2007	✓	▣	■	✓	✓	✓	✓	□	□	□	□		✓					S		12	■				
039	Trends in threat categories to fungi in Great Britain		✓	1992	2007	✓	▣	■	✓	✓	✓	✓	□	□	□	□		✓					S		12	■				
041	Trends in soil invertebrate abundance and broad taxa		✓	1998	2007	✓	▣	■	✓	✓	✓	✓	□	□	□	□		✓					S		12	■				
042	Changes in the extent of lowland heath in Dorset		✓	1759	1978	*	▣	■	✓				□	■	■	■		✓					S	5		■				
043	Changes in the extent of heath land in Dorset		✓	1750	1996	*	▣	■	✓				□	■	■	■		✓					S	5		■				
045	Number of bird species of high, medium & low conservation concern	✓	✓	1990	2009	✓	▣	■	✓	✓	✓	✓	■	□	■	□		✓					R		12	■				
065	Trends in topsoil concentrations of heavy metals in Great Britain		✓	1998	2007	✓	▣	■	✓	✓	✓	✓	■	□	□	■		✓					R	8		■				
066	Exceedance of critical acid loads for UK broad habitats		✓	2004	2009	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					R	8		■				
069	Regional 5-year mean conc. of water quality parameters -large rivers	✓		1980	2005	*	■	■	✓	✓	✓	✓	■	□	□	□		✓					R	8	14	■				
073	Nitrogen stock and availability in soils		✓	1998	2007	✓	▣	■	✓	✓	✓	✓	■	□	□	□		✓					P	4	7	14	■			
074	Lengths of rivers (England & Wales) containing nitrate & phosphorus	✓		1990	2009	✓	□	■	✓		✓		■	□	□	□		✓					R	8	14	■				
075	Changes in mean Olsen-P concentration within broad habitats in GB		✓	1998	2007	✓	▣	■	✓	✓	✓	✓	■	□	□	□		✓					P	8		■				
077	Trends in pH in surface and subsurface soils in UK		✓	1993	2011	✓	□	■	✓	✓	✓	✓	■	■	■	□		✓					P	8		■				
086	Above ground biomass in road verges in Gloucestershire		✓	1968	1993	*	□	■	✓				□	■	■	U		✓					S	5		□				
087	Patterns of primary production in UK waters		✓	1998	2012	✓	▣	■	□	✓	✓	✓	■	U	■	□		✓					S	10		■				
090	Extent of habitat types in the UK	✓	✓	1990	2007	✓	▣	■	✓	✓	✓	✓	■	□	□	□		✓					S	5		■				
095	Number of Red deer in Scottish highlands		✓	1965	2003	*	▣	■		✓			□	■	■	U		✓					P		14	□				
102	Plant species diversity due to land use change in Scotland		✓	1590	2000	*	U	■		✓			□	■	■	■		✓					P	5		■				
108	Impact of different grazers on upland habitats in Scotland		✓	1997	2003	*	U	■		✓			□	■	■	□		✓						5	14	■				
116	Condition of semi-natural grassland habitats		✓	2002	2010	✓	▣	■	✓	✓	✓	✓	■	U	□	U		✓					S	5		□				
117	Overall trends and conservation status for UK habitats and species	✓	✓		2007	✓	□	□	✓	✓	✓	✓	□	□	■	□		✓						5		□				
119	Transition of semi-natural grasslands in the South Downs		✓	1971	1991	*	▣	■	✓				□	■	■	□		✓					S	5		□				
120	Change in extent of semi-natural grassland in England and Wales		✓	1932	1984	*	▣	■	✓		✓		■	■	■	U		✓					S	5		□				
122	Geographic extent and location of lowland grassland sites		✓		2010	*	U	□	✓				□	U	□	U		✓					S	5		■				
126	UK BAP targets for restoration of semi-natural grassland habitats		✓	2005	2010	✓	■	■	✓	✓	✓	✓	□	□	□	□		✓					S	5	15	□				
129	Long-term trends in areas of orchards in Great Britain and the UK		✓	1875	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P		14	■				
132	Trends in the overall length of managed hedgerows		✓	1990	2007	✓	▣	■	✓	✓	✓	✓	■	□	□	□		✓					P		14	■				
133	Trends in the overall land area covered by farm woodlands		✓	1981	2011	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P	7		■				
140	Lengths of rivers in the UK containing nitrate and phosphorus	✓		2001	2009	✓	□	■	✓	✓	✓	✓	■	□	□	□		✓					P	8	14	■				
074	Lengths of rivers (England & Wales) containing nitrate & phosphorus	✓		1990	2009	✓	□	■	✓		✓		■	□	□	□		✓					R	8	14	■				
141	Trends in populations of UK farmland birds		✓	1970	2010	✓	□	■	✓	✓	✓	✓	■	■	□	U		✓					C	1	7	12	■			
149	Changes in woodland area in the UK over 10 centuries		✓	1086	2011	✓	▣	■	✓	✓	✓	✓	■	□	□	□		✓					R	5	14	■				
154	Trends in populations of UK woodland birds		✓	1970	2010	✓	□	■	✓	✓	✓	✓	■	■	□	□		✓					C	1	12	■				
165	Changes in the delivery of ecosystem services at Kielder forest		✓	1920	2010	*	▣	■	✓				□	U	■	□		✓					S		14	□				
174	Trends in chemical and biological quality of rivers across the UK	✓		1990	2009	✓	▣	■	✓	✓	✓	✓	■	■	□	□		✓					R	8	14	■				
175	Trends in quality measures from headwaters in Great Britain	✓		1990	2007	✓	▣	■	✓	✓	✓	✓	■	■	□	□		✓					R	8	14	■				
176	Trends in the nitrate classification of rivers across England & Wales	✓		1995	2008	✓	▣	■	✓		✓	✓	■	■	□	□		✓					R	8	14	■				
177	Trends in minimum pH in an upland stream at Llyn Brianne, Wales	✓		1981	2005	*	□	■				✓	□	■	■	□		✓					R	8		■				
178	Trends in total reactive phosphorus in the Avon river, England	✓		1955	2010	✓	□	■	✓				□	■	■	□		✓					R	8		■				
180	Spatial patterns in chemical and biological quality of rivers across GB	✓		2006	2008	✓	■	□	✓	✓	✓	✓	■	■	□	□		✓					R	8		■				
181	Spatial variations in water quality in north west England	✓		1995	2001	*	▣	■	✓				□	■	■	□		✓					R	8		□				
182	Spatial patterns in nitrate concentrations of rivers across GB	✓		2006	2008	✓	■	□	✓	✓	✓	✓	■	■	□	□		✓					R	8		■				
183	Ecological status classes for rivers and river basins in Great Britain	✓		2008	2008	✓	□	□	✓	✓	✓	✓	■	■	□	□		✓					R	5		■				
199	Growing depth of macrophytes in relation to changes in phosphorus	✓		1905	2006	*	▣	■		✓			□	■	■	□		✓					S	8	14	□				
200	Conc. of soluble reactive phosphorus in basins of Windermere	✓		1945	2005	*	□	■	✓				□	■	■	□		✓					R	8		■				
205	Historical and current (modelled) extent of wetlands in England	✓		8000BC	2008	*	▣	■	✓				□	■	■	U		✓					S	5	14	■				
206	Characteristics of floodplains in the UK	✓	✓	1995	2008	✓	▣	■	✓	✓	✓	✓	■	■	□	□		✓					R	5	14	■				
207	Extent of UK wetlands	✓	✓	1990	2007	✓	▣	■	✓	✓	✓	✓	■	□	■	□		✓					R	5	14	□				
217	Spatial analysis of public urban greenspace		✓	2004	2010	*	U	□	✓				□	□	□	U		✓					C	1	14	□				
218	Analysis of greenspace in four urban areas of England		✓	2001	2001	*	▣	□	✓				□	□	□	□		✓					C	1	14	□				
221	Urban greenspace composition within Scotland		✓	2009	2009	*	▣	□	✓	✓	✓	✓	■	■	□	U		✓					C	1		■				
224	Designated green belt land in the UK		✓	2009	2009	*	▣	□	✓	✓	✓	✓	■	■	□	□		✓					C	3	5	14	□			

Table 2: continued

Data Set ID No.		Freshwater			First Data Point	Most Recent Data Point	Data Collection ongoing?	Sampling Frequency	Time Series	Geography					Can Be Disaggregated	Transparency	Method	Fees	Options P1: Awareness	Options P2: ES	Options P3: HC	Options P4: PGR	Options P5: CC	Options P6: Business	Most Relevant Ecosystem Service	SG A : Mainstreaming	SG B : Pressures	SG C : Status	SG D : Benefits	SG E : Implementation	Subjective Quality Score
		Marine	Terrestrial	England						Scotland	Wales	Northern Ireland																			
229	Status of urban surface water in Scotland	✓	✓		2009	✓	□	□		✓	✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	R				14	■			
231	Distributions and approximate extent of coastal margin habitat in GB	✓	✓	1990	1990	✗	⊠	□	✓	✓	✓	✓	■	■	□	■	✓	✓	✓	✓	✓	R	5		14	□					
234	Extent, trends and condition in coastal margin habitats	✓	✓	1950	2006	✓	⊠	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R	5			□					
235	Length of UK coastline with erosion and protection	✓	✓	2010	2010	✗	U	□	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R	5			□					
240	Distribution of marine habitat types found in UK marine waters	✓		2010	2010	✗	U	□	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	S	5			□					
243	Spatial distribution of the annual value of fish landings	✓		2004	2007	✗	□	□	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	P	6	14		□					
251	Farmed shellfish production in England and Wales	✓		1993	2010	✓	□	■	✓	✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	P	6	14		■					
252	Yearly small pelagic fisheries and fishmeal production in the UK	✓		1950	2006	✓	□	■	✓	✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	P	6	14		■					
257	Area of National Park in England		✓	1951	2010	✓	⊠	□	✓				□	■	□	□	✓	✓	✓	✓	✓	C	1	11		□					
265	Extent and distribution of broad habitat types in Wales	✓	✓	2004	2004	✗	■	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	5			■					
266	Habitat complexity and species richness in Countryside Survey plots		✓	1978	2007	✓	⊠	□	✓	✓	✓	✓	■	U	□	□	✓	✓	✓	✓	✓	S	5	14		■					
268	Habitat (biotope) diversity in marine habitats of Wales	✓		2010	2010	✗	■	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	5			■					
269	Trends for priority UK BAP habitats in the UK	✓	✓	2002	2008	✓	■	□		✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	S	5		19	□					
270	Trends for priority UK BAP species in the UK	✓	✓	2002	2008	✓	■	□		✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	S		12	19	□					
271	Short-term abundance of widespread breeding birds in Wales		✓	1994	2010	✓	□	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	C			14	■					
276	Distribution of crested dogs-tail/knapweed grassland in Wales		✓	1987	2004	✗	U	□		✓	✓	✓	□	■	■	U	✓	✓	✓	✓	✓	S	7	12		■					
277	Extent and community diversity of grasslands in Wales		✓	2010	2010	✗	■	□		✓	✓	✓	□	■	■	□	✓	✓	✓	✓	✓	S	7	12		■					
287	Condition of riverine species and riverine habitats in SACs in Wales	✓			2010	✗	U	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	5	12		□					
288	Accessible Natural Greenspace Standards in Wales		✓	2007	2010	✗	□	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	C	1	11		□					
292	State of commercial marine fish species	✓		1989	2009	✓	□	■	✓	✓	✓	✓	■	■	□	U	✓	✓	✓	✓	✓	P	6	14		■					
293	Soil map and soil groups of England and Wales		✓	1998	1998	✗	U	□	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R			14	■					
302	Trends in biological quality of streams in Wales	✓		1990	2008	✓	U	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	R	8		14	□					
304	Agricultural less favoured areas in Wales		✓		2011	✗	U	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	P	7		14	□					
318	Change in the status of widespread breeding land birds in Scotland		✓	1994	2010	✓	□	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	C			14	■					
319	Percentage changes in seabird populations		✓	1969	2002	✗	⊠	■	✓	✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	C	5	12		■					
324	UK NEA broad habitat types in main river catchments of Scotland	✓	✓	2000	2000	✓	■	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	5			□					
327	National Vegetation Classification of plant communities in GB		✓	1975	2000	✓	⊠	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	S	5	14		□					
342	Marine habitats, substrate types and tide stress in Scotland's seas	✓		2004	2008	✗	⊠	□	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓		5	14		■					
343	Length of coastal margin habitats in Scotland	✓	✓	1984	2011	✗	■	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	R	5	14		■					
349	Topsoil organic carbon content of Scotland's soils		✓	2008	2008	✗	U	□		✓	✓	✓	□	U	□	■	✓	✓	✓	✓	✓	R	5	15		■					
350	Estimated extent of soil erosion in upland Scotland		✓	1988	1989	✗	⊠	□		✓	✓	✓	□	U	■	U	✓	✓	✓	✓	✓	R	7			□					
352	Area of sensitive habitats at risk from acid and nutrient deposition		✓	1995	2006	✗	□	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	8			■					
372	Salmon and sea trout caught in estuaries and freshwaters	✓	✓	1952	2009	✓	□	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	P	6	14		■					
381	Net Landscape Ecological Potential Index for Scotland		✓	2011	2011	✗	⊠	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	5	14		□					
391	Extent and type of wetlands in England	✓			2008	✗	⊠	□	✓				□	■	□	□	✓	✓	✓	✓	✓	S	5	14		□					
406	Number of Species in Northern Ireland	✓	✓		2010	✓	⊠	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	1	12		■					
407	TBC																														
408	Status of Northern Ireland priority habitats and species	✓	✓	2005	2008	✓	U	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	1	5	12		□				
424	Applications for residential development in Northern Ireland		✓	2002	2010	✗	□	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	P	4			■					
427	Priority habitats in Northern Ireland's marine environment		✓	2011	2011	✓	⊠	□		✓	✓	✓	□	■	U	□	✓	✓	✓	✓	✓	S	5			□					
428	Winter dissolved inorganic nitrogen for sea loughs in NI		✓	1992	2007	✗	□	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	S	8			■					
431	Salmon catch in Northern Ireland	✓	✓	2002	2009	✓	□	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	P	6	14		■					
442	Water bodies in NI at risk of not meeting GES in 2015	✓	✓	2004	2004	✓	□	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	R	4	5		□					
444	Surface water and ground water concentrations of nitrate in NI	✓		2004	2008	✗	□	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	R	8			□					
450	Soil geography and type of Northern Ireland		✓		1996	✗	■	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	R	5			■					
452	Status of designated sites in Northern Ireland	✓	✓	1998	2007	✓	□	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓			11		□					
454	Environmentally sensitive areas in Northern Ireland	✓	✓	2010	2010	✗	■	□		✓	✓	✓	□	■	U	□	✓	✓	✓	✓	✓		5	11		□					
456	Less favoured areas in Northern Ireland		✓		2009	✓	■	□		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	P		11		■					
021	Hardwood production in the UK		✓	1961	2011	✓	□	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	P	4	7	14		■				
023	Softwood production in the UK		✓	1961	2011	✓	□	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	P	4	7	14		■				
151	New woodland creation		✓	1976	2011	✓	■	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	P			15		■				
019	Number of beekeepers and colonies in Great Britain		✓	1953	2008	✓	□	■	✓	✓	✓	✓	■	■	■	□	✓	✓	✓	✓	✓	R	1		14		■				
032	Species richness of vegetation plots in Great Britain		✓	1978	2007	✓	⊠	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R	7	12	18		■				
146	Extent of ancient and semi-natural woodland in the UK		✓	2001	2011	✓	□	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	C	5			■					
091	Extent and distribution of (BAP and NEA) habitat types in the UK	✓	✓	1990	2007	✓	⊠	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R	5			■					
091a	Extent and distribution of Less Favoured Areas (LFA)		✓		2000	✓	⊠	U	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	P	5			■					
273	Butterfly indicator for Wales		✓	1976	2008	✓	□	■		✓	✓	✓	□	■	□	□	✓	✓	✓	✓	✓	R		12		□					
283	Extent of woodland in the UK		✓	1924	2000	✓	⊠	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	P	5			□					
385	Loss, depletion and decline of vertebrate and invertebrate species	✓	✓	1800	2009	✓	⊠	■	✓				□	■	□	□	✓	✓	✓	✓	✓	S		12		■					
008	Area of land under agri-environment schemes in the UK		✓	1992	2010	✓	□	■	✓	✓	✓	✓	■	■	■	□	✓	✓	✓	✓	✓	P	4	7		■					
033	Population trends of butterfly species		✓	1976	2010	✓	□	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R	7	12		■					
037	Trends in widely established non-native species in Great Britain	✓	✓	1960	2007	✓	□	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R	9			□					
040	Distribution of <i>Pilularia globulifera</i> (pillwort) in the UK		✓	1970	2011	✓	⊠	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	S		12		□					
101	Number, extent and distribution of protected area designations, UK		✓		2010	✓		U	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	P	1	11		□					
150	Changes in woodland cover in Great Britain by county		✓	1895	1998	✓	⊠	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R	5			■					
185	Extent of physical modifications to rivers in Great Britain	✓		1995	2008	✗	⊠	■	✓	✓	✓	✓	■	■	□	U	✓	✓	✓	✓	✓	R	5	14		■					
202	Change in estimated number of ponds and pond density across GB	✓		1998	2007	✓	⊠	■	✓	✓	✓	✓	■	■	□	□	✓	✓	✓	✓	✓	R	5	14		■					
219																															

