Dataset Documentation

Freshwater river macroinvertebrate surveys (Biosys)

12/02/2024

This document will help you understand and use the Freshwater river macroinvertebrate survey dataset held in Biosys

Dataset description

This is for Approval for Access product Afa307.

Biosys is a database for storing, manipulating and reporting data from freshwater and marine biological surveys at any taxonomic level. These samples are collected and analysed by the Environment Agency and by third parties.

All the relevant data associated with Biosys freshwater macrophyte surveys, such as site information, sample information and analysis information can be obtained from the [Ecology and Fish data explorer](#). The data can be accessed using the interactive map to produce small downloadable files or they can be downloaded in bulk as a set of relational CSVs that can be linked via unique codes in each file.

The data downloads are split into three different files within the Ecology and Fish data explorer: Sites, metrics and taxa. You will see them labelled in the downloads as follows:

- INV_OPEN_DATA_SITE (Contains freshwater invertebrate site information)
- INV_OPEN_DATA_METRICS (Contains freshwater invertebrate sample and metric information)
- INV_OPEN_DATA_TAXA (Contains freshwater invertebrate analysis and taxa information)

If you are bulk downloading the full dataset there is also a fourth file available which contains additional taxonomic information for all of the taxa listed in our database:

- OPEN_DATA_TAXON_INFO (Contains taxonomic information for all taxon names available in Biosys)

The tables can be related to each other using the joins below:

- INV_OPEN_DATA_SITE.SITE_ID = INV_OPEN_DATA_METRICS.SITE_ID
- INV_OPEN_DATA_METRICS.ANALYSIS_ID = INV_OPEN_DATA_TAXA.ANALYSIS_ID
- OPEN_DATA_TAXON_INFO.TAXON_LIST_ITEM_KEY = INV_OPEN_DATA_TAXA.TAXON_LIST_ITEM_KEY

Please refer to the dataset content table, at the end of this document, for an explanation of the fields/columns in each file.

API

The macroinvertebrate dataset can also be accessed using an API (Application Programming Interface): Ecology and Fish Data API. For more information regarding the service please visit the dedicated Frequently Asked Questions section of the Defra Data Services Portal (DSP) Forum: Ecology and Fish Data FAQs.

This dataset includes data from monitoring locations in England only. For Welsh survey data please contact Natural Resources Wales.

Update frequency

This dataset is extracted monthly on the first Sunday of each month. It can then take a week or so for the data to appear on the explorer.   Data entered onto Biosys immediately prior to extraction may not have been quality assured and so may not reflect the final version of the data. Recent data can be identified by viewing the DATE_OF_ANALYSIS field.

Related datasets

Sites in this dataset may also be listed in the Freshwater river macrophyte (Biosys) or Freshwater river diatom (Biosys) dataset.

Common questions & known issues

Known issues:

Reporting Area and Agency Area names:

The Reporting Area field was added to the Explorer as part of the 2022 update. The Reporting Area identifies the team who report on that data. It is more closely aligned to the Environment Agency public face Area names than the older, Agency Area field. The table below shows the comparison between all the fields.

Please be aware that the geographical boundaries for the old Southern and Thames Agency Areas do not match the geographical boundaries for the current Areas replacing them. Therefore, a small proportion of sites located in the old Area may not be located in the matched new Area:

Agency Area (Old EA Region and Area Name)	Reporting Area	EA Public Face Area Name
Anglian - Central	East Anglia - West	East Anglia
Anglian - Eastern	East Anglia - East	East Anglia
Anglian - Northern	Lincolnshire and Northamptonshire	Lincolnshire and Northamptonshire
North West - North	Cumbria and Lancashire	Cumbria and Lancashire
North West - South	Greater Manchester Merseyside and Cheshire	Greater Manchester Merseyside and Cheshire
South West - Devon	Devon and Cornwall	Devon and Cornwall
South West - Cornwall	Devon and Cornwall	Devon and Cornwall
South West - North Wessex	Wessex	Wessex
South West - South Wessex	Wessex	Wessex
Midlands - Central	West Midlands	West Midlands

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Midlands - East	East Midlands	East Midlands
Midlands - West	West Midlands	West Midlands
North East - Yorkshire	Yorkshire	Yorkshire
North East - North East	North East	North East
Thames - North East	Hertfordshire and North London	Hertfordshire and North London
Thames - South East	Kent South London and East Sussex	Kent South London and East Sussex
Thames - West	Thames	Thames
Southern - Kent & E. Sussex	Kent South London and East Sussex	Kent South London and East Sussex
Southern - Solent & South Downs	Solent and South Downs	Solent and South Downs

WFD Waterbody ID:

Care should be taken when using this field to search for data. The WFD Waterbody ID field is populated on Biosys with the Water Framework Directive waterbody ID that the site *sits* in. This may be different to the Waterbody that the site is used to produce a WFD status assessment for. This field is often null for historic sites and may also be null where a site sits in a waterbody that is too small to have a WFD ID. The ID may also relate to the WFD cycle 1 set of waterbodies or cycle 2 waterbody IDs. If you are interested in a particular waterbody ID then it is also worth using this field in conjunction with a search on the interface map and/or an extract of the data using the Waterbody name.

The catchment data explorer can also be used to give further high level information on a particular waterbody and could be used to compliment/support interpretation of this dataset.

Common questions:

What data are included in this dataset?

All freshwater (river) macroinvertebrate samples that have been collected using our standard sampling methods and analysed in the laboratory are included in this dataset. The standard sampling methods are:

• 3-MIN POND NET (BT001): 3-min active sampling, 1-min hand search as per BT001

• AIR LIFT (BT001): Air lift, 1-min pond net sweep, 1-min hand search as per BT001

• DREDGE (BT001): Naturalists dredge, 1-min sweep & 1-min hand search as per BT001

The 3-min pond net sample method listed on Biosys includes both 3-min kick samples and also 3-min sweep samples with a long-handled pond net.

Although dredge samples are included in this dataset please note that we no longer use this as a standard sampling method or include dredge samples in WFD classifications (this change was brought in in spring 2017). This is because research has demonstrated that it is not comparable with the RIVPACS standard kick-sampling methodology.

In 2023, we began monitoring macroinvertebrates as part of the Small Streams Network (SSN). We introduced a slight variation to the 3-min pond net sample method to enable us to split the 2-min active sampling (& hand search) and the 1-min active sampling portions of the kick sample in separate pots. This contributed to our future method development. It's unlikely this method will be used much in the future as it was created for the pilot year. This dataset includes the full 3-min combined analysed sample only (where the two pots were combined and analysed), as it is comparable with our existing data. The sample method is be displayed as:

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- 3-MIN (2+1) POND NET SPLIT SAMPLE: (2-min active sampling & 1-min hand search) + (1-min active sampling)

Please note that we do not include pollution sample data or protected species where releasing details of their location could have a detrimental effect e.g. freshwater pearl mussels.

This database only includes data from samples analysed in a laboratory, which are subject to internal quality assurance procedures where 1 in 20 samples are re-analysed. We do not release data analysed on the bankside as they are not subject to the same QA procedures.

Site name is excluded from this dataset. This is because it is a free-text field and may contain information or data that cannot be released under an Open Government Licence.

The sample reason field in this dataset displays a generic primary sample reason such as 'National monitoring' or 'Local investigative monitoring'. It does not include detail on all of the reasons for which the sample has been collected.

Can I use this data to run through RICT (River Invertebrate Classification Tool) to produce a Water Framework Directive (WFD) classification?

Yes, you can get the data required for RICT from these datasets, if the data has been collected.

The RICT User guide pages have a *'RICT2 data extraction template'* you can download to help you manipulate the data. Your downloaded data, from the interactive map in the Ecology and Fish data explorer, can then be pasted into the template. The data is then converted into the format required by RICT (It will work with RICT2 and RICT3). **Please note** that this tool is for use with the Map-downloaded data *only* and not the bulk downloads (via the downloads page) as the formats are different.

Not all sites have environmental base data listed. If this is the case it will not be possible to run RICT unless you have your own additional data for the site. For some fields, additional data can be gathered from other sources or a surrogate used in RICT. To help fill in any gaps, alkalinity data is available on the Water Quality Archive from our water quality monitoring points. Alkalinity does not vary that much from site to site or year to year, so it's possible to interpolate a value based on monitoring sites nearby, particularly on the same geology and/or watercourse. However please be aware that alkalinity should be at reference status to produce an accurate classification. Therefore measured values of alkalinity, especially from waterbodies that are heavily impacted by anthropogenic discharges may not be suitable for use in producing classifications and should be used with caution.

RICT needs natural alkalinity, hardness or calcium concentration. They should be annual averages that include data from summer. Also conductivity can be used in RICT instead of alkalinity if that is available as an alternative. It can also be measured with an inexpensive hand held meter if you have access to the site/s you are interested in.

Discharge category (as shown in the table below) is listed from 1-10. We take the naturalised annual mean discharge/flow in cumecs (cubic meters per second) for a site and convert it to a discharge category.

Discharge category	Naturalized mean annual discharge (cumecs)
1	<0.31
2	0.31 to 0.62
3	0.62 to 1.25
4	1.25 to 2.50
5	2.50 to 5.00

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6	5.00 to 10.00
7	10.00 to 20.00
8	20.00 to 40.00
9	40.00 to 80.00
10	>80.00

If a discharge category is not listed, and you have access to the site, then RICT also accepts flow velocity category, which is easy to measure using an orange or float. The EA is not currently resourced or insured to provide discharge category data to third parties. However, further work is planned on RICT to make environmental variables such as width, depths, substrate, and discharge category available for watercourses on a 50m grid. Unfortunately we cannot give any timescales for when this work will happen.

Have sample & analysis methods changed over time?

Yes, when analysing long-term trends going back before 1990, bear in mind that the sampling methods used by our biologists were different across the country. RIVPACS methods were used for the 1980 National Survey which provided some standardisation.

We now also analyse the majority of our samples to mixed-taxon level compared to historic analysis which was predominantly to family-level. Mixed-taxon analysis was implemented across all Areas in 2012, although some had been analysing to this level much earlier. Before 2000 we only required analysts to record taxa that contributed to the BMWP. Since the inception of the Water Framework Directive, guidance, training and quality assurance of macroinvertebrate survey methods and identification has improved; bringing greater consistency, precision and accuracy within our datasets.

Please also see the invertebrate_timeline excel spreadsheet, included with this document, that provides an overview of some of the changes to our sampling and analysis, tools, training and regional variation.

Are the number of taxa actual numbers or estimated?

Macroinvertebrate data is displayed as number found + number estimated.

For historic data you may see the numbers 3, 33, 333, 3333 etc. recorded. These values were calculated for some data that had been recorded as a RIVPACS Log10 abundance categories, rather than a numerical abundance. These calculated values were then uploaded to the Biosys database. Data from 2002 onwards should not contain this calculated data as all laboratories moved to recording numerical abundance after 2000.

The 3,33,333 etc. calculated values were a very simplistic conversion from the RIVPACS logarithmic abundance categories (see table below). So, for example, 3 = A, 33 = B etc. The conversion was needed to allow abundances to be pooled from samples where we needed to combine Spring and Autumn or Spring, Summer, Autumn data to use in RIVPACS.

We moved to recording estimated abundance, rather than categories, to allow taxon counts to be aggregated in mixed level samples for indices such as WHPT. Where there are low numbers of individuals of a taxon (usually < 10) the actual number found in the sample is recorded. For numbers greater than that, an estimated number is recorded.

What are the abundance categories?

The abundance categories are displayed below.

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Abundance category	Number of individuals
A	1 - 9
B	10 - 99
C	100 - 999
D	1,000 - 9,999
E	10,000 +

What macroinvertebrate indices are supplied in this dataset?

The majority of the indices provided in this output display data in 3 related fields per index (the total score, the number of taxa and the average score per taxon). Each index is derived from a list of invertebrate taxa that may include macroinvertebrate families, genera and/or species. These taxon units are assigned a taxon value or score depending on the index and their sensitivity to the pressure measured by the index. So, for example, in the BMWP index many stonefly families score 10 because they are highly sensitive to organic pollution. Worms score 1 because they are tolerant to organic pollution. Adding all of these values together for a sample will give the total score e.g. BMWP_TOTAL or WHPT_TOTAL. The number of macroinvertebrate families that contributed to that total score is displayed as the BWMP_N_TAXA. The total score is divided by the number of taxa to give the BMWP_ASPT (Average Score Per Taxon).

Indices are calculated from the relevant, recorded taxa. Historically a large proportion of samples were analysed to family-level only. Mixed-taxon level analysis became more common from 2012 onwards although certain laboratories have carried out mixed-taxon level analysis for much longer and some national programmes have required this level of analysis for decades. If species/mixed-level indices are not displayed then that means there were no taxa recorded at that level of identification. If an index requires family-level data then any species/genera are attributed to the relevant family as part of the calculation.

Please note that Biosys will calculate indices for all macroinvertebrate samples as long as there is at least 1 'scoring' taxon present. Care should be taken when interpreting indices, and the values produced, to ensure that there is sufficient taxonomic data present to have confidence in the output. For example indices that require species-level data will still be generated for historic samples that were analysed to family-level but had one known species recorded. The index is not valid for that sample. Checking the taxonomic data recorded would help you to understand this, as would a check of the number of taxa contributing to each index.

A brief overview of the indices are given below. Further information on Water Framework Directive (WFD) classifications, WHPT and BMWP can be found on the UK Tag pages here.

BMWP - BMWP (The Biological Monitoring Working Party) score system was introduced in 1980 to provide an index of river water quality for England and Wales based on aquatic macroinvertebrates and their sensitivity to organic pollution. The presence of certain macroinvertebrate families contributes to the total BMWP score. In general, where water quality is good you would expect to see that reflected in higher BMWP scores. This has been replaced by the WHPT index for use in Water Framework Directive classifications throughout the United Kingdom.

WHPT - WHPT (The Whalley Hawkes Paisley Trigg) index can be used for assessing the impacts of organic pollution and other pressures that affect oxygen and siltation on freshwater macroinvertebrate communities. It replaces the BMWP indices. It is used in RICT to produce a Water Framework Directive classification. Macroinvertebrate families and their abundance contribute to the index.

Note that, within this dataset, we also supply the WHPT non-abundance weighted indices - these provide WHPT indices on a presence-only basis, where the *abundance* of families is **not** taken into account. These are less commonly used and care should be taken not to confuse them with the abundance

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weighted WHPT indices used for WFD status classification. The non-abundance weighted indices fields are displayed as:

WHPT_**NW**_N_TAXA, WHPT_**NW**_TOTAL and WHPT_**NW**_ASPT.

Download the WHPT paper here.

LIFE - The LIFE (Lotic-invertebrate Index for Flow Evaluation) indices can be used to assess the impacts of variable flows on freshwater macroinvertebrate communities. Macroinvertebrate families and their abundance contribute to the family-level LIFE index. Macroinvertebrate species and their abundance contribute to the species-level LIFE index. Download the LIFE paper as a PDF using this link.

CCI - The CCI (Community Conservation Index) assigns a conservation value on whole communities of aquatic invertebrates based on a sample. UK species are assigned a score based on their perceived rarity, where 1 is very common and 10 is endangered/extinct. CCI derives an average score which is then enhanced by a measure of taxon richness (BMWP CoS) or the rarest taxon present (CSmax_CoS). The highest value (CCI_CoS) is used in the final index. The CCI paper can be downloaded here.

PSI - The Proportion of Sediment-sensitive Invertebrates (PSI) can be used for assessing the impacts of sediment pressure on freshwater macroinvertebrate communities. UK taxa are assigned to one of four scores indicating adaptation to fine sediment deposition (sensitive (A), fairly-sensitive (B), fairly-insensitive (C), insensitive (D)). These scores are then enhanced by abundance category and a ratio of sensitive and insensitive is calculated. Macroinvertebrate families and their abundance contribute to the PSI-level LIFE index. Macroinvertebrate Species and their abundance contribute to the species-level PSI index. Download the PSI paper as a PDF using this link.

E-PSI - The Empirically-weighted Proportion of Sediment-sensitive Invertebrates (E-PSI) can be used for assessing the impacts of sediment pressure on freshwater macroinvertebrate communities. It works in the same way as PSI except that the taxon values have been adjusted using taxonomic data versus recorded sediment cover derived from the database of the invertebrate predictive model (RIVPACS). Instead of four categories there are sensitive (S) and insensitive (I) taxa. Download the E-PSI paper using this link.

DEHLI - The DEHLI (Drought Effect of Habitat Loss on Invertebrates) index can be used for assessing the impacts of drought on freshwater macroinvertebrate communities. Macroinvertebrate families contribute to this index but for some families only some specific genera are assigned Drought Intolerant Scores (DIS) or excluded from the calculation. The paper can be downloaded as a PDF here.

How do I use the taxonomic information?

The Natural History Museum maintain the UK Species Inventory (UKSI) and we use that to update our 'taxon dictionary' in Biosys. They maintain a bespoke checklist for us that limits the taxon names we can record against and also ensures we have the taxon hierarchy and names required by our calculations. This does mean that sometimes we have bespoke names or names that are slightly out-of-date. You can use our dataset to understand the latest name that we use (as this may be different in older samples), the type of taxon (e.g. macrophyte) but also the recommended NBN Taxon_Version_Key. If you wish to link to other datasets then it is the taxon_version_key (TVK) that you need.

Disclaimers:

Note: We do our best to avoid quality problems but this dataset reflects the data we hold. Our datasets may contain errors.

External websites:

We have provided links to external websites as a convenience and to provide additional information. We are not responsible for the reliability or content of those external websites. We are not liable for any loss or damage that may come from using the external website links in this document.

Sort code:

We list the Sort code in Biosys which is derived from the Maitland list, owned and maintained by CEH. Our sort code list contains omissions, additions and errors and should *not* be used as a definitive list. It can be used as an aid to ordering taxa in a taxonomic hierarchy.

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Dataset content

Description of column headings

Field name	Description	Freshwater Macroinvertebrate Site	Freshwater Macroinvertebrate Metrics	Freshwater Macroinvertebrate Taxa	Taxon information
AGENCY_AREA	EA Area name as given in Biosys for site (e.g. NORTH WEST - NORTH)	Yes		Yes	
REPORTING_AREA	EA Area name based on more-up-to-date Areas e.g. Cumbria and Lancashire.	Yes		Yes	
CATCHMENT	Catchment in Biosys, free-text field (e.g. LUNE)	Yes			
WATERBODY_TYPE_ DESCRIPTION	Waterbody type recorded in Biosys from a pick-list (e.g. RIVER: Natural/semi-natural flowing fresh watercourse)	Yes			
WATER_BODY	Water body in Biosys, free-text field (e.g. LUNE (NW CENTRAL))	Yes			
SITE_ID	Unique numeric Site identifier generated when the site was created in Biosys (e.g. 66155)	Yes	Yes		
SITE_VERSION	Version number of site in Biosys. Together with the SITE_ID this denotes a unique site record.	Yes			

NGR_PREFIX	Two letter prefix of National Grid Reference (e.g. SS)	Yes			
EASTING	Five-digit Easting of NGR (e.g. 58450)	Yes			
NORTHING	Five-digit Northing of NGR (e.g. 03430)	Yes			
NGR_10_FIG	Ten-digit National Grid Reference (e.g. SS5845003430)	Yes			
FULL_EASTING	Full Easting of the site (e.g. 258450)	Yes			
FULL_NORTHING	Full Northing of the site (e.g. 103430)	Yes			
WFD_WATERBODY_ID	WFD ID code given in Biosys (e.g. GB112072065980).	Yes			
ALTITUDE	Altitude of the site (m)	Yes			
SLOPE	Slope of the site (m/km)	Yes			
DIST_FROM_SOURCE	Distance from Source (km)	Yes			
DISCHARGE	This is a discharge category and ranges from 1-10. It is the mean flow in cumecs for the site which is then converted to a category.	Yes			
WIDTH	Channel width (m)	Yes			
DEPTH	Channel depth (cm)	Yes			
BOULDERS_COBBLES	Percentage of substrate that is recorded as boulders/cobbles in the site Base Data (%)	Yes			
PEBBLES_GRAVEL	Percentage of substrate that is recorded as pebbles/gravel in the site Base Data (%)	Yes			

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SAND	Percentage of substrate that is recorded as sand in the site Base Data (%)	Yes			
SILT_CLAY	Percentage of substrate that is recorded as silt/clay in the site Base Data (%)	Yes			
ALKALINITY	Alkalinity recorded in the site Base Data (mg/l)	Yes			
CONDUCTIVITY	Conductivity recorded in the site Base Data (uSm)	Yes			
TOTAL_HARDNESS	Total Hardness recorded in the site Base Data (mg/l)	Yes			
CALCIUM	Calcium recorded in the site Base Data (mg/l)	Yes			
BASE_DATA_DATE	Date the site Base Data (e.g. Width, depth etc.) was entered against the site in Biosys (e.g. 01/01/1995)	Yes			
MIN_SAMPLE_DATE	The first Macroinvertebrate sample date at the site.	Yes			
MAX_SAMPLE_DATE	The latest Macroinvertebrate sample date at the site.	Yes			
COUNT_OF_SAMPLE S	The number of Macroinvertebrate samples taken at the site.	Yes			
ECN_SITE_INV	This field identifies if a site is sampled for macroinvertebrates as part of the Environmental Change Network.	Yes			
SAMPLE_ID	Sample ID generated when the sample is added to Biosys (e.g. 282922)		Yes		

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SAMPLE_VERSION	Version number of sample in Biosys. Together with the SAMPLE_ID this denotes a unique sample record.		Yes	
REPLICATE_CODE	A free-text field used to differentiate between replicate samples taken at the same site, date and time.		Yes	
SAMPLE_DATE	Date the sample was taken (e.g. 05/05/1994)		Yes	
SAMPLE_TYPE_DESCRIPTION	The type of sample collected (e.g. FRESHWATER: INVERTEBRATE All macroinvertebrate samples)		Yes	
SAMPLE_METHOD_DESCRIPTION	The type of sample method used (e.g. 3-MIN POND NET (BT001): 3-min active sampling, 1-min hand search as per BT001)	Yes	Yes	
SAMPLE_REASON	Displays a generic sample reason e.g. National/Investigative/Local purposes etc.		Yes	
ANALYSIS_ID	Analysis ID created when analysis has been added against the sample (e.g. 264143)		Yes	Yes
DATE_OF_ANALYSIS	Date the sample was analysed.		Yes	
ANALYSIS_TYPE_DESCRIPTION	Analysis type description as recorded in Biosys e.g. LABORATORY PRIMARY: Analysed in laboratory by primary analyst		Yes	
ANALYSIS_METHOD_DESCRIPTION	Analysis method description as recorded in Biosys e.g. LOG		Yes	

	ABUNDANCE: Estimate of the log abundance (scale as BT001)			
BMWP_N_TAXA	Number of taxa contributing to the BMWP index		Yes	
BMWP_TOTAL	BMWP index total score		Yes	
BMWP_ASPT	BMWP index Average Score Per Taxon.		Yes	
CCI_N_TAXA	Number of taxa contributing to the CCI index		Yes	
CCI_CS_TOTAL	CCI index total score		Yes	
CCI_ASPT	CCI index Average Score Per Taxon.		Yes	
CSmax_CoS	Part of the CCI index calculations - it displays the conservation score of the rarest taxon in the sample.		Yes	
BMWP_CoS	Part of the CCI index calculations - it displays the Conservation Score derived from the BMWP score.		Yes	
CCI_CoS	This displays the highest Conservation Score (from either the rarest taxon or the BMWP range) and is used in the final CCI calculation.		Yes	
CCI	The final Community Conservation Index.		Yes	
DEHLI_N_TAXA	Number of taxa contributing to the DEHLI index		Yes	
DIS_TOTAL	DEHLI index total score		Yes	

DEHLI	The final DEHLI index.		Yes		
EPSI_ML_S_GRP	The number of Mixed-level E-PSI sensitive (S) taxa		Yes		
EPSI_ML_ALL_GRP	The number of Mixed-level E-PSI sensitive (S) and insensitive (I) taxa.		Yes		
EPSI_MIXED_LEVEL_ SCORE	Mixed-level E-PSI index		Yes		
EPSI_S_GRP	The number of family-level PSI A&B (sensitive/fairly sensitive) taxa		Yes		
EPSI_ALL_GRP	The number of family-level PSI scoring (A,B,C & D) taxa		Yes		
EPSI_FAMILY_SCORE	Family-level PSI index		Yes		
LIFE_N_TAXA	Number of taxa contributing to the Family LIFE index		Yes		
LIFE_SCORES_TOTA L	Family LIFE index total score		Yes		
LIFE_FAMILY_INDEX	Family LIFE index		Yes		
LIFE_SPECIES_N_TA XA,	Number of taxa contributing to the Species LIFE index		Yes		
LIFE_SPECIES_SCOR ES_TOTAL,	Species LIFE index total score		Yes		
LIFE_SPECIES_INDEX	Species LIFE index		Yes		
PSI_ML_AB	The number of mixed-level PSI A&B (sensitive/fairly sensitive) taxa		Yes		
PSI_ML_ABCD	The number of mixed-level PSI scoring (A,B,C & D) taxa		Yes		

			Yes		
PSI_MIXED_LEVEL_S CORE	Mixed-level PSI index		Yes		
PSI_AB	The number of family-level PSI A&B (sensitive/fairly sensitive) taxa		Yes		
PSI_ABCD	The number of family-level PSI scoring (A,B,C & D) taxa		Yes		
PSI_FAMILY_SCORE	Family-level PSI index		Yes		
WHPT_N_TAXA	Number of taxa contributing to the WHPT index. Can be used in RICT: TL2 WHPT NTAXA (AbW,DistFam)		Yes		
WHPT_TOTAL	WHPT index total score.		Yes		
WHPT_ASPT	WHPT index Average Score Per Taxon. Can be used in RICT: TL2 WHPT ASPT (AbW,DistFam)		Yes		
WHPT_NW_N_TAXA	Number of taxa contributing to the non-abundance weighted WHPT index. **Note**: Do not confuse this with the more commonly used WHPT index which includes abundance.		Yes		
WHPT_NW_TOTAL	Non-abundance weighted WHPT index total score. **Note**: Do not confuse this with the more commonly used WHPT index which includes abundance.		Yes		
WHPT_NW_ASPT	Non-abundance weighted WHPT Average Score Per Taxon.		Yes		

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Field	Description				
	Note: Do not confuse this with the more commonly used WHPT index which includes abundance.				
IS_THIRD_PARTY_DATA	Lists whether the data is from a third-party organisation. **Note**: a 'No' entry may still mean data has been provided by a third-party (particularly for historic data) as this is a relatively new field in Biosys.		Yes		
TAXON_LIST_ITEM_KEY	This is a unique ID, assigned by the NHM, to each name in the EA checklist. This code is required by Biosys.			Yes	Yes
TAXON_NAME	Name of the taxon unit e.g *Alainites muticus*				Yes
TOTAL_ABUNDANCE	Abundance of the taxon recorded in the Analysis for the sample (e.g. 3)			Yes	
ABUNDANCE_CATEGORY	Abundance category of the taxon recorded in the Analysis for the sample (e.g. A, B, C, D, E)			Yes	
TAXON_VERSION_KEY	This is a unique ID, assigned by the NHM to different versions of a taxon name e.g. where authority or context (e.g. *sensu stricto*) is different. This is the NBN code that can be used to link to data with other organisations & the National Biodiversity Network.				Yes
AUTHORITY	Naming authority e.g. (L.) Gaertn.; Linnaeus, 1758.				Yes

SORT_CODE	This is a code (also known as the maitland code) defined by CEH to enable us to sort taxa in a hierarchy. NOTE: our list is not the definitive list and contains omissions/errors. The latest list can be downloaded from the CEH website.				Yes
TAXON_NAME_CURR ENT	Yes/No field to denote where the taxon is the most current name in use on our system.				Yes
PREFERRED_TAXON _NAME	This is the most current and preferred name for the taxon on Biosys. If the TAXON_NAME_CURRENT field is 'No' then you will see the latest name listed here.				Yes
PREFERRED_NAME_ TVK	The Taxon Version Key for the Biosys preferred taxon name. This is the NBN code that can be used to link to data with other organisations & the National Biodiversity Network.				Yes
NBN_RECOMMENDE D_TVK	This is the NHM recommended Taxon Version Key (taken from their Nameserver table). This is the NBN code that can be used to link to data with other organisations & the National Biodiversity Network.				Yes
PARENT_TLIK	The parent Taxon_List_Item_Key for the parent taxon in Biosys				Yes
PARENT_TAXON_NA ME	The Parent taxon name.				Yes

					Yes
TAXON_RANK	Taxon rank e.g. Family, species etc.				Yes
TAXON_TYPE	Lists the taxon type in Biosys e.g. Algae; Other Macroinvertebrate; Macrophyte.				Yes
TAXON_GROUP_NAME	Lists the taxon group as defined by the NHM e.g. alga; crustacean.				Yes
NON_NATIVE_SP	Lists whether the taxon is a non-native species to England.				Yes
PROTECTED_TAXA	Lists whether the taxon is a protected species. Note we use JNCC information to help us list protected species but we only flag taxa that have the potential to be impacted by activities we permit or activities we carry out.				Yes