Merman Reports Guide

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This guide provides further details on the reports that can be run and extracted to PDF or MSExcel, once a user is logged into Business Objects. All reports can be found under the 'Corporate Documents' section and have been created by the MERMAN management team or IBM. Reports should be refreshed by the user upon opening so that any new data since the last access is incorporated into the report. A brief description of each report is given below and more in depth explanation is given in the following section where necessary. The reports are:

1) **Riverine Input Data (RID)** - Concentrations of contaminants are measured monthly since 1990 at all major UK estuaries and the proportion of contaminants being discharged to the sea from riverine, industrial and waste water sources calculated. The data is then used to report annual inputs to the sea on 3 different regional scales: estuary, region and sea area. Use of RID data by CMAs must be notified to the MERMAN management team who in turn will inform the RID OSPAR contact.

- RID_data_per_estuary
- RID_data_per_sea_area
- RID_data_per_sampling_region
- RID_OSPAR_report

2) **Benthic Invertebrate Data** – Benthic invertebrate data has been collected at approximately 70 sites every year since 1990. There are two specific reports for benthic invertebrate data: firstly one report that allows an extraction of the raw abundance data in a matrix format with stations along the x axis and taxon along the y axis; secondly a report that allows the extraction of community indicies (e.g. Shannon index) for each sample showing graphs for spatial and temporal trends.

- Benthic_invert_matrix
- Benthic_invert_indicies

3) **Contaminants in water, sediment and biota**. These reports show a general query of data per sampling medium with the associated metadata needed for interpretation. They are split into 3 sheets: the first shows the raw data, the second shows graphs of differences between stations within a monitoring year for each contaminant (spatial analysis) and the third shows differences between years at a single station (temporal analysis).

- Contaminants_sediment

- Contaminants_water
- Contaminants_biota
- MON_sediment_extraction
- MON_biota_extraction

4) **Analytical Quality Control**. These reports look at the AQC and PT data specifically. There are 4 reports currently providing the RO to fully check their data before they unhold it. This includes checking that AQC data have been properly linked to sample data, looking at final 'scores' calculated by the data filter and seeing how AQC and PT results have varied over time. Only data that have passed the data filter are forwarded to ICES. The NMCAG chair also has access to these reports.

- AQC_final_scores
- AQC_data_crosscheck
- AQC_PT_report

5) **Extraction in MERMAN submission format.** These reports for sediment, biota, water and benthic inverts allow submitters to extract their data in a format that with some minor edits can be pasted into a submission template and submitted to MERMAN. They can be used in instances where submitters have either lost or are unsure of the most recent submission file or other circumstances such as changes in CMA status.

- Extract_merman_sub_format_sediment
- Extract_merman_sub_format_biota
- Extract_merman_sub_format_water
- Extract_merman_sub_format_benthic_invert

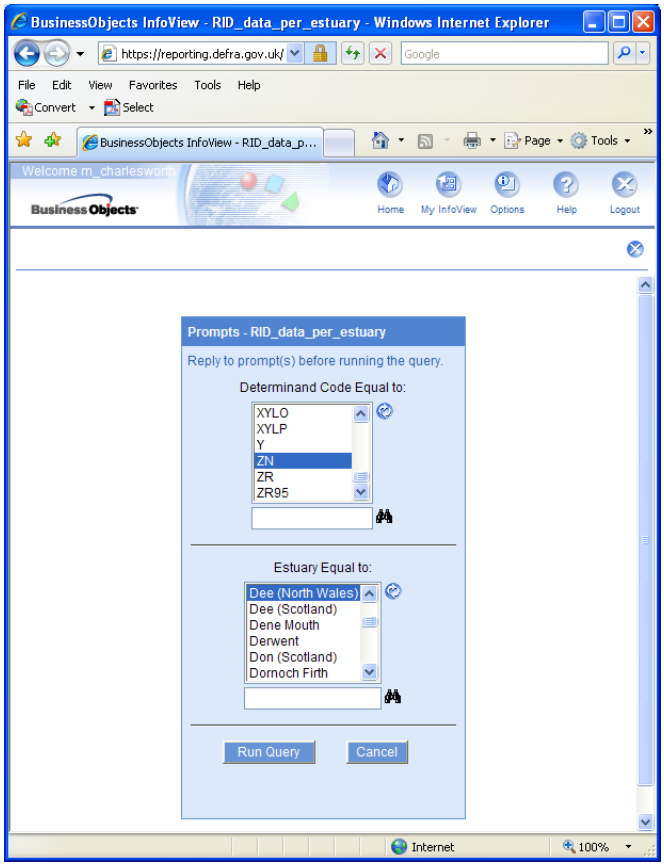
6) **General Management.** The work status report can be used to identify what submissions have been made in any one year by each organisation and also the status of those submissions (held/unheld). The Data Screening Report shows data on a log scale for each station and parameter which should be used by submitters after submitting to check that there is no anomalous data. The ICES report is used by BODC to transfer data into the format required for submission to ICES.

- Data_screening_report
- Work_status
- ICES

1) RID reports

RID_data_per_estuary

This report enables the user to see how a particular contaminant varies in time within a specific estuary. An estuary is the lowest level of sample area.



There are two tabs available once the user has selected a determinand and an estuary:

- *Estuary Information:* Provides a summary of the estuary. This includes the location of the estuary (box coordinates within which the samples have been collected), flow information as collected over the years, and the different discharge types and determinands that have been measured within these. The main discharge types are 'Industrial', 'Riverine' and 'Sewage'. A unit summary is also provided which specifies the units for the chosen determinand by

determinand group. Select continuing pages from the page tabs at the top of the report.

- *Summary results for Determinand:* Provides a graphical display of the *mean* value of the determinand in each discharge type that it's measured. Due to the limitations of Business Objects, the user has to check the previous page to see the unit of measure for the determinand selected. The results table breaks down the values measured for each discharge type and gives a total for the monitoring year. Select continuing pages from the page tabs at the top of the report.

RID_data_per_sampling_region

This report enables the user to see how a particular contaminant varies in time over a specific sampling region. A sampling region can contain more than one estuary.

There are two tabs available once the user has selected a determinand and an estuary:

- *Sampling Region Information:* Provides a summary of the locations of the individual estuaries contained within the sea area. The flow information for each estuary over the years is also summarised as are the various discharge types per region and determinands measured within these. Select continuing pages from the page tabs at the top of the report.
- *Summary results for Determinand:* Provides a graphical display of the *mean* value of the determinand in each discharge type that it's measured. Due to the limitations of Business Objects, the user has to check the previous page to see the unit of measure for the determinand selected. The results table breaks down the values measured for each discharge type over the whole sea area and gives a total for the monitoring year. Select continuing pages from the page tabs at the top of the report.

RID_data_per_sea_area

This report enables the user to see how a particular contaminant varies in time over a specific sea area. A sea area encompasses several sampling regions, or estuaries, and is the highest level of sampling area.

There are two tabs available once the user has selected a determinand and an estuary:

- *Sea Area Information:* Provides a summary of the locations of the individual sampling regions and estuaries contained within the sea area. The flow

information for each sampling region over the years is also summarised as are the various discharge types per region and determinands measured within these. Select continuing pages from the page tabs at the top of the report.

- *Summary results for Determinand:* Provides a graphical display of the *mean* value of the determinand in each discharge type, in each estuary that it's measured. Due to the limitations of Business Objects, the user has to check the previous page to see the unit of measure for the determinand selected. The results table breaks down the values measured for each discharge type in each estuary in the region and gives a total for the monitoring year. Select continuing pages from the page tabs at the top of the report.
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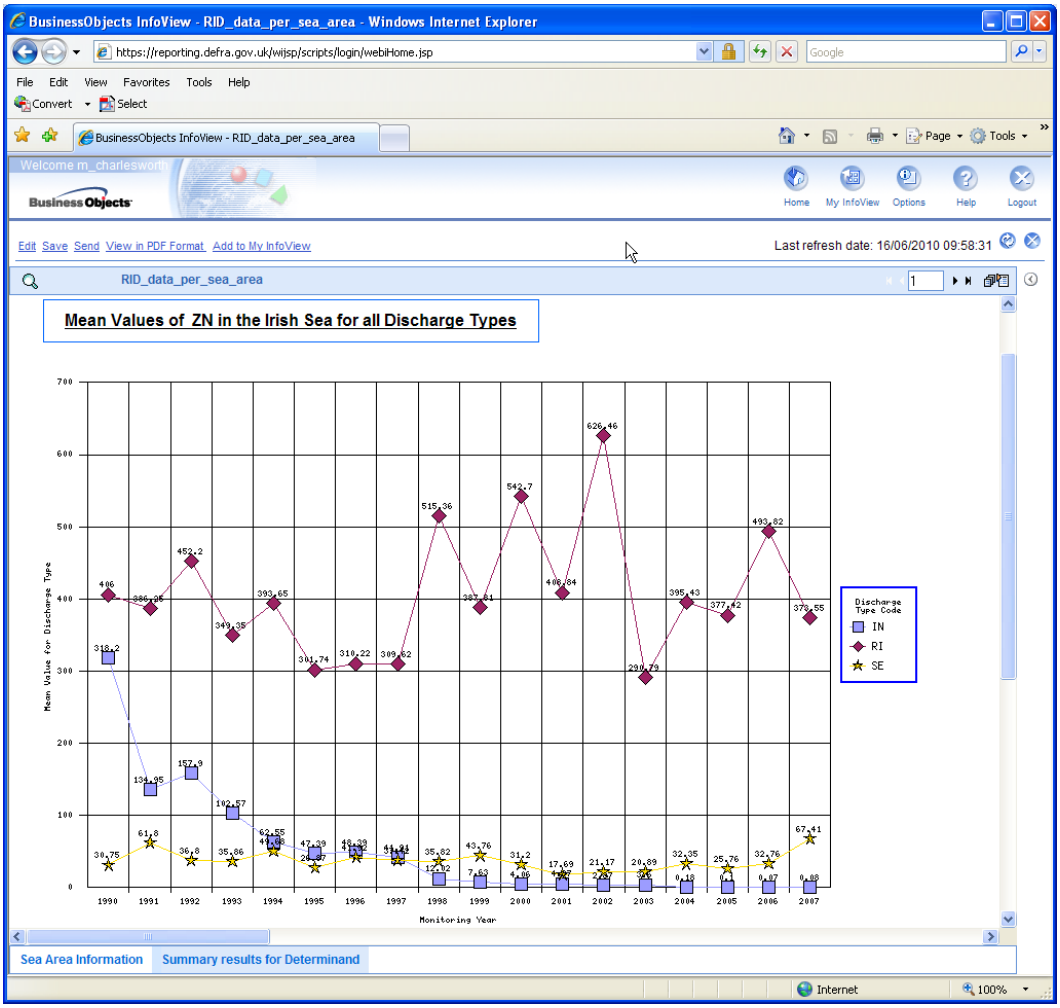
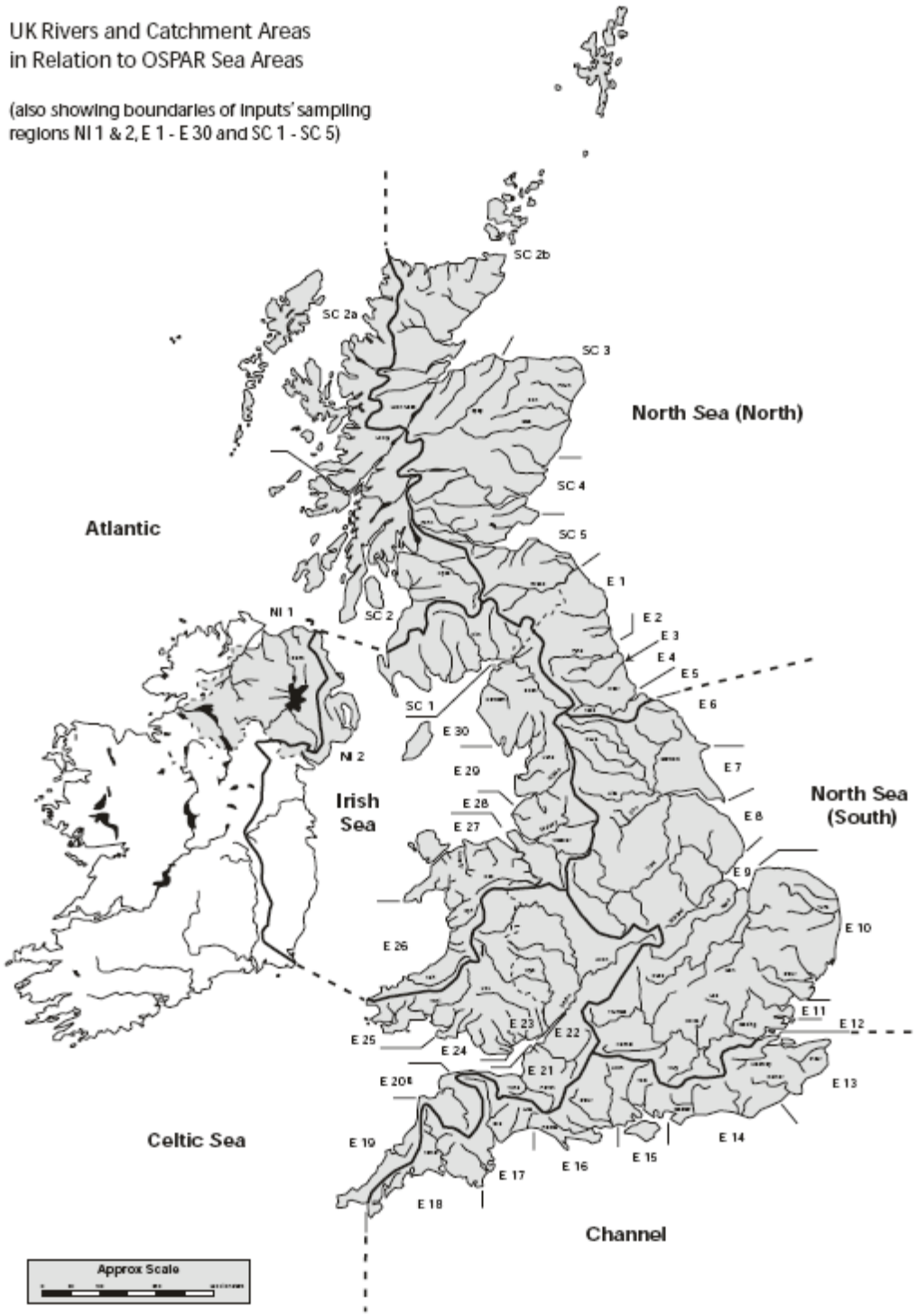


RID_OSPAR_report

This report is used to transfer the RID data in MERMAN into the form required for submission to OSPAR however it may be useful for other needs. The user is

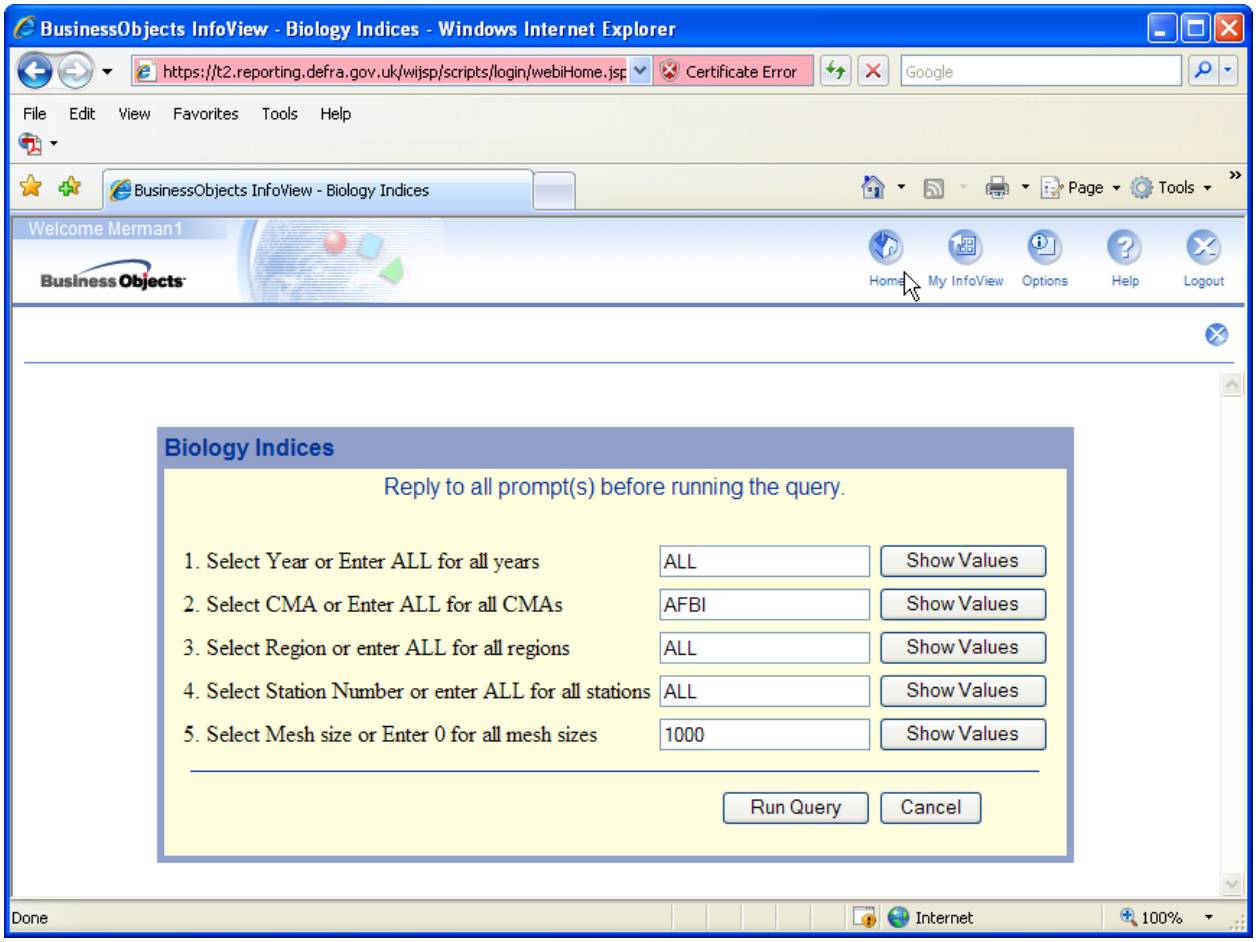
prompted to choose a year and then the report displays a separate sheet for each of riverine, industry, fish farms, wastewater and a sheet that gives the totals. Lower and upper estimates are given for each parameter for the chosen year and are broken down into each sampling region and sea area.



2) Benthic Invertebrate Reports

Biology Indices

The biology indicies report can be used to extract indicies (e.g. Simpsons Index) for each sample taken for benthic invertebrate data in MERMAN. This can be used to determine temporal trends at 1 station or spatial trends between stations on any one year. This report can be found under the corporate documents section after logging into Business Objects. When opened the user is presented with a query pane that allows the selection of data by year, organisation, CP2 sea region, station and mesh size.



Upon running the query the report produced has two tags shown in the bottom left hand corner: Spatial trend assessment and Temporal trend assessment. The former is to allow comparisons of indices between stations on any one year and the later is to allow comparisons of indices at one station across many years. Under each tab and year a table shows the results for the indices and below are graphs for each index. These may be exported to MS Excel and manipulated further if necessary.

The indicies have been calculated as follows:

- n_i The number of individuals in species i; the abundance of species i.
- *S* The number of species (species richness) in a sample or group of samples.
- *N* The total number (abundance) of all individuals in a population
- p_i The relative abundance of each species, calculated as the proportion of individuals of a given species to the total number of individuals in the community: $\frac{n_i}{N}$

Shannon (H') Index: $H' = -\sum_{i=1}^{S} p_i \log 2\ p_i$

(Note that a number of different logs can be used to calculate Shannon. Under the advice of NMBAQC and as specified previously by the Group Coordinating Sea Disposal Monitoring, log2 has been used)

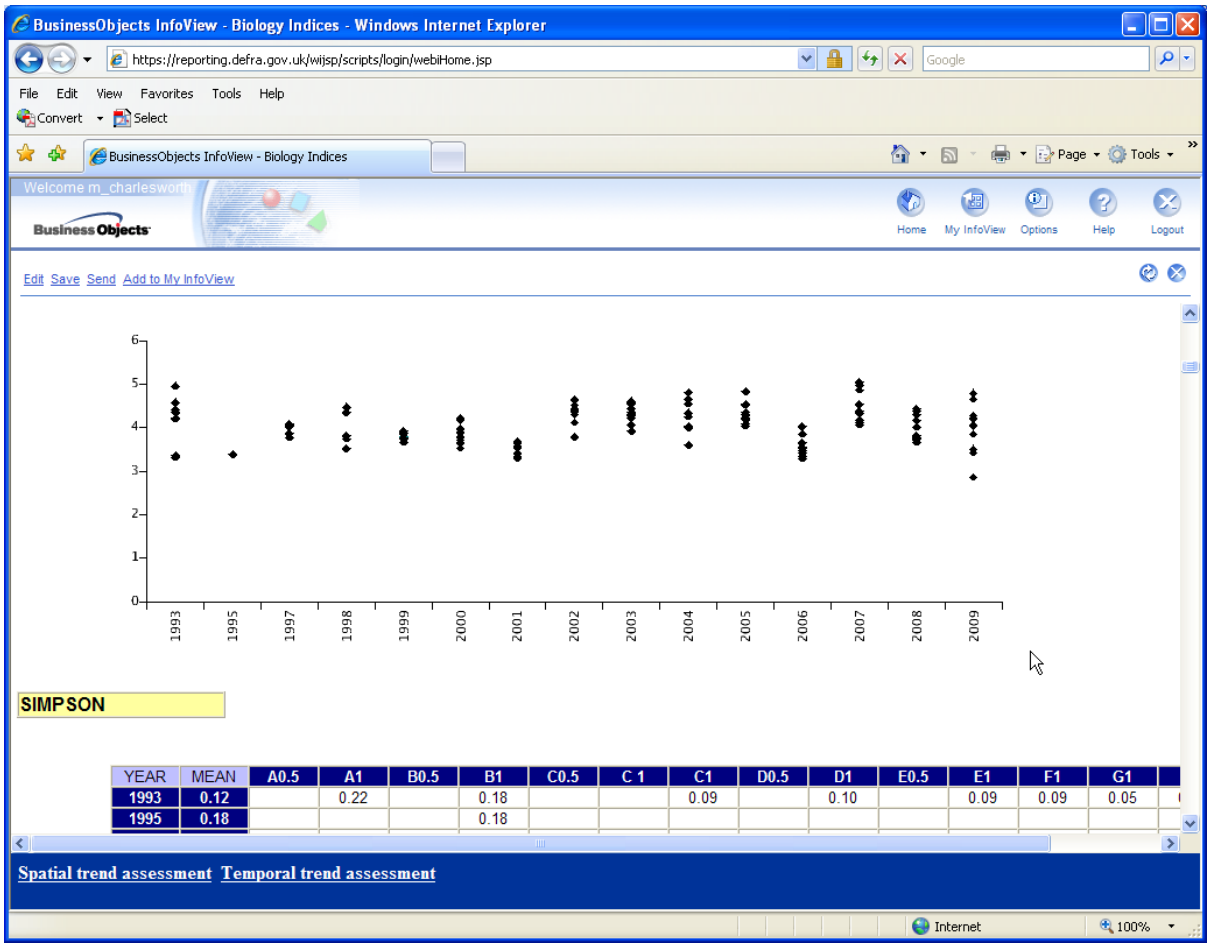
Simpsons Index: $\frac{\sum_{i=1}^{S} n_i(n_i-1)}{N(N-1)}$

Pielou: Shannon / (log (S, 10))

Margalef: (S – 1) / (log (N), 10)

In all cases, if a taxon has been recorded as being present this result is given an abundance of 1. Please refer to the literature for the interpretation of the indices. It should be noted that the indices may 'fall over' if there is only 1 taxa or a total abundance of 1 in the sample.

To test the results were being calculated correctly a dataset and indices (calculated by PRIMER) were provided by the Environment Agency. The data was submitted to MERMAN and the results compared. In all cases the results were identical with the exception of the calculation of the Pielou index which is dependent on the log used for the calculation of the Shannon index: in MERMAN log2 is used to calculate Shannon. Full details of the testing is available on request.

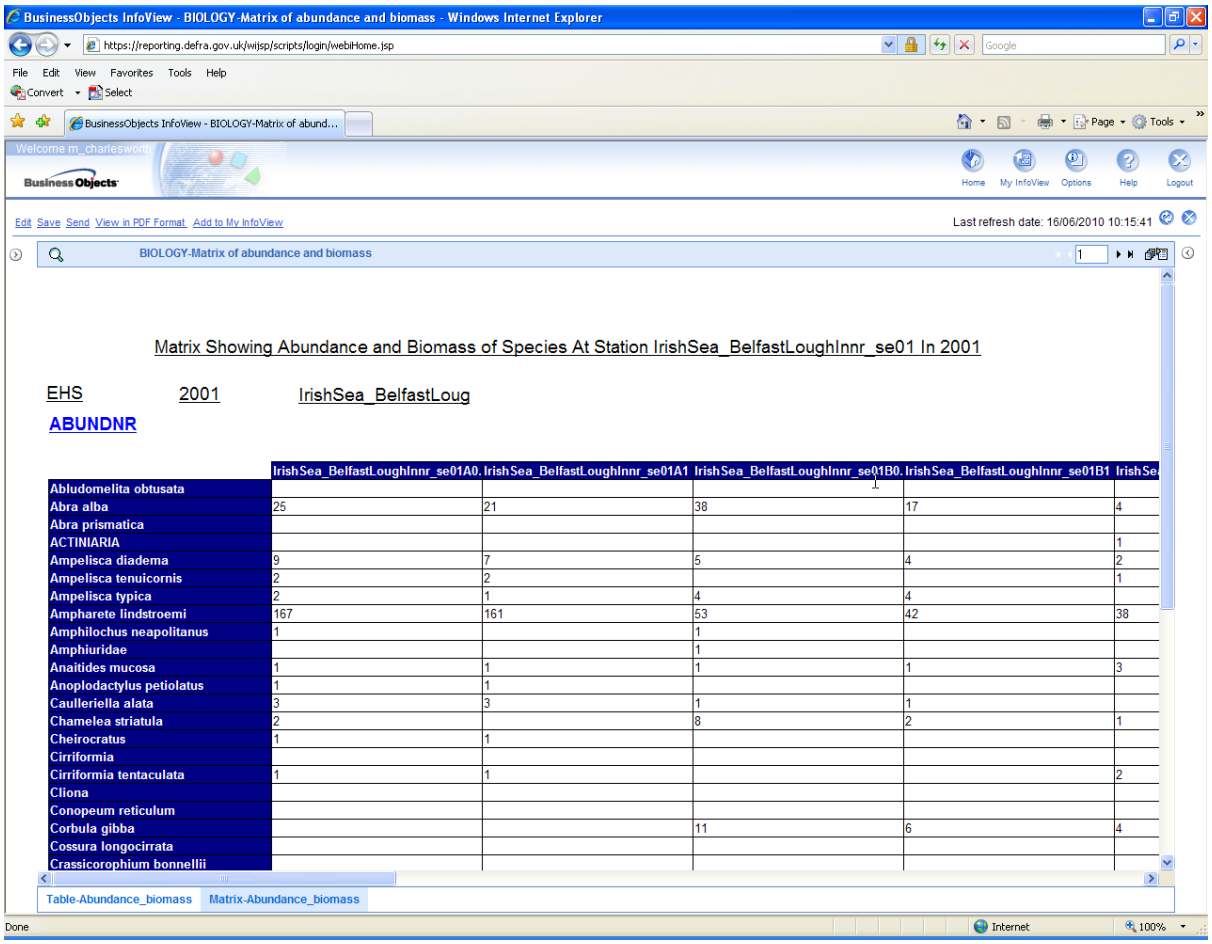

BusinessObjects InfoView - Biology Indices - Windows Internet Explorer
https://reporting.defra.gov.uk/wijsp/scripts/login/webiHome.jsp
File Edit View Favorites Tools Help
Convert Select
BusinessObjects InfoView - Biology Indices
Welcome m_charlesworth
Business Objects
Home My InfoView Options Help Logout
Edit Save Send Add to My InfoView
6
5
4
3
2
1
0
1993 1995 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009
SIMPSON
YEAR MEAN A0.5 A1 B0.5 B1 C0.5 C 1 C1 D0.5 D1 E0.5 E1 F1 G1
1993 0.12 0.22 0.18 0.09 0.10 0.09 0.09 0.05
1995 0.18 0.18
Spatial trend assessment Temporal trend assessment
Internet
100%

Benthic invert matrix

This allows a user to specify a year and a station and extract the species data in a matrix format with species on the y axis and samples on the x axis. The user is prompted to choose a station and a monitoring year.

As the station list is now very large, the user must choose from 5 categories from the drop down menu which are organised in alphabetical groups.

The report is split into 2 pages, one for abundance data and one for biomass data.



	IrishSea_BelfastLoughInnr_se01A0	IrishSea_BelfastLoughInnr_se01A1	IrishSea_BelfastLoughInnr_se01B0	IrishSea_BelfastLoughInnr_se01B1	IrishSe
Abludomelita obtusata					
Abra alba	25	21	38	17	4
Abra prismatica					
ACTINIARIA					1
Ampelisca diadema	9	7	5	4	2
Ampelisca tenuicornis	2	2			1
Ampelisca typica	2	1	4	4	
Ampharete lindstroemi	167	161	53	42	38
Amphilochus neapolitanus	1		1		
Amphiuridae			1		
Anaitides mucosa	1	1	1	1	3
Anoplodactylus petiolatus	1	1			
Caulleriella alata	3	3	1	1	
Chamelea striatula	2		8	2	1
Cheirocratus	1	1			
Cirriformia					
Cirriformia tentaculata	1	1			2
Cliona					
Conopeum reticulum					
Corbula gibba			11	6	4
Cossura longocirrata					
Crassicorophium bonnellii					

3. Contaminants in Sediment, Water, and Biota reports

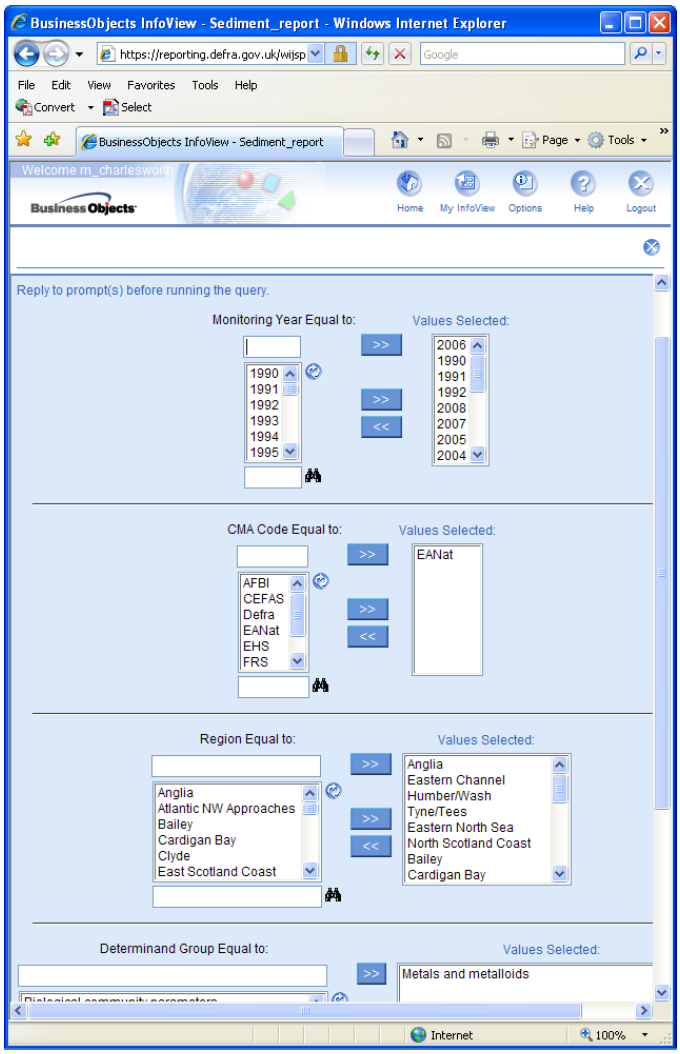
When using contaminant data for temporal or spatial trend assessments it is critical that the data is comparable. In particular, the user should pay particular care to the fields BASIS (whether the data is reported on a wet or dry weight basis), MATRIX (the fraction of sediment or the part of organism that has been analysed) and the species used for determination of biota data.

Contaminants_Sediment

This report allows the extraction of raw data and interpreted graphs for groups of contaminants measured in sediment. The user is prompted to choose which years, CMAs (monitoring authorities), sea regions (equivalent to Charted Progress 2 regions) and determinand groups (e.g. metals) he/she is interested in. You can deselect options to suit your needs.

When run, the report has 3 tabs. The first shows the raw data which can be exported as required, the second shows a spatial analysis, i.e. concentration of each determinand for each monitoring year across all sampling stations, and the third tab shows temporal analysis i.e. concentrations of each determinand at each station across all monitoring years. Some example of outputs from the sediment, biota and water reports are given below.

Users should be aware that each 'symbol' or point on the graph at a particular station represents a **replicate sample**. Because Business Objects generates a unique symbol for every point, we have not added a legend because this can become unmanageable when you have 5 replicates at each site and several sites.

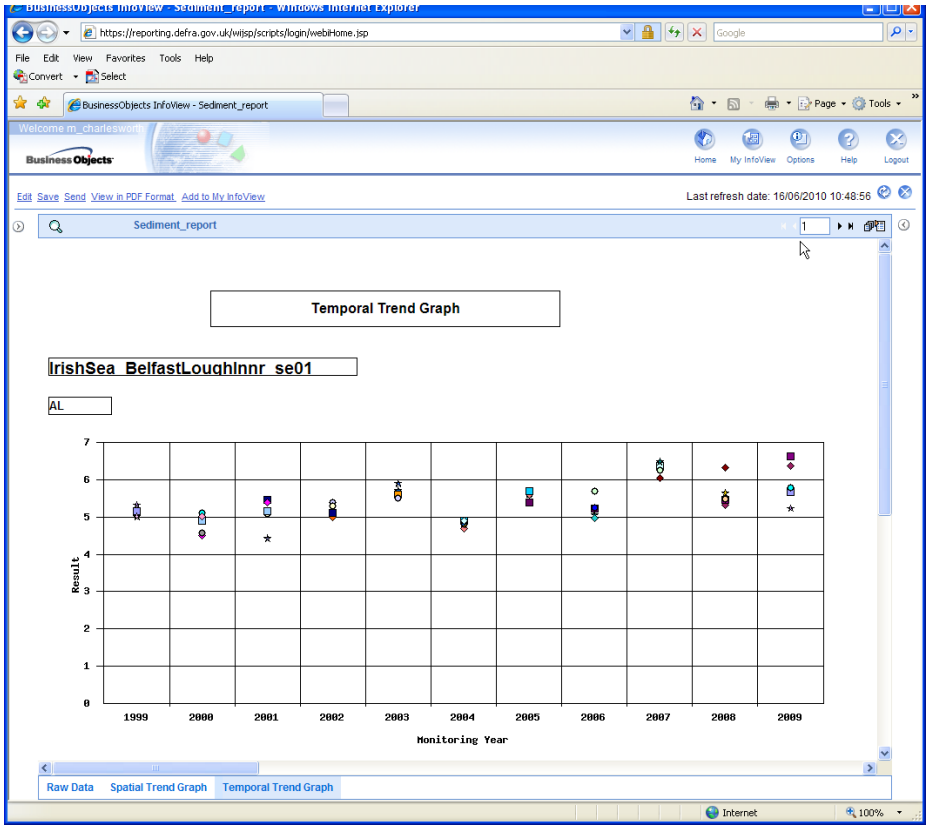


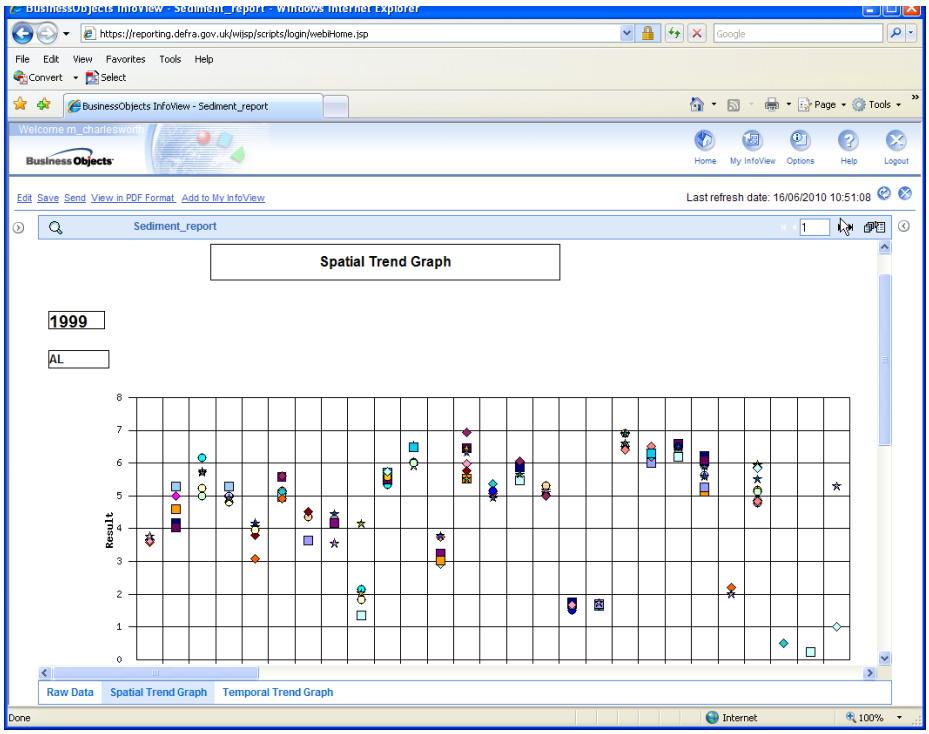
Contamninants_Biota

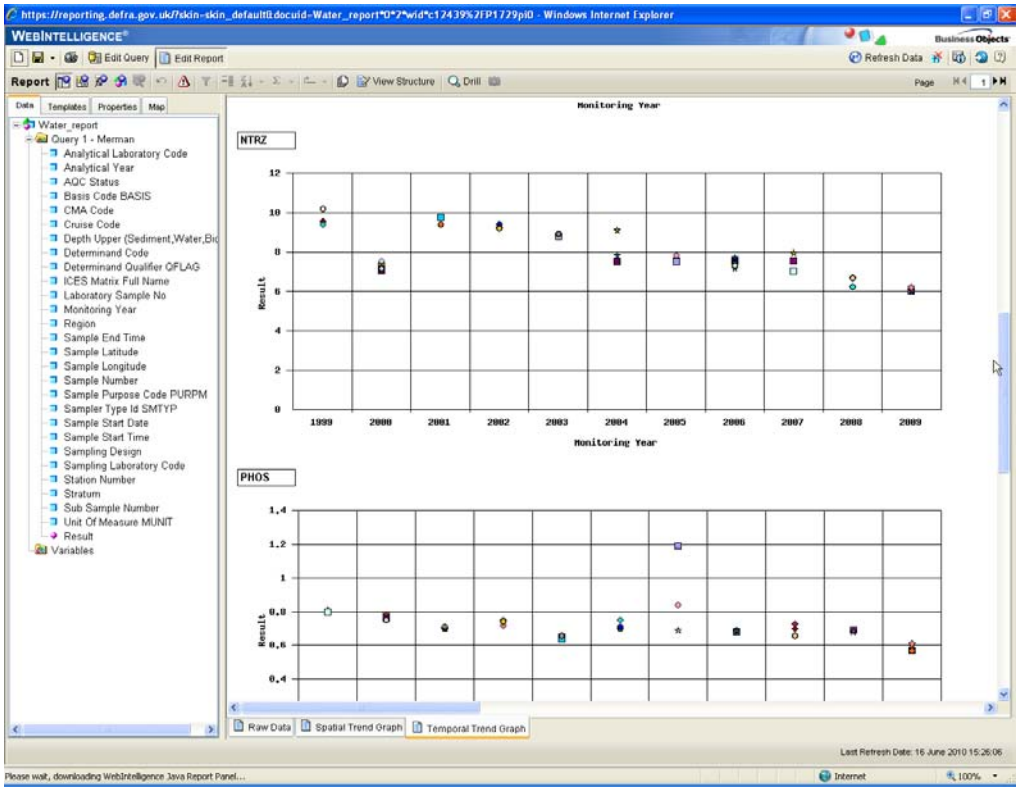
This report is very similar to the sediment report except it obviously only considers contaminants measured in shellfish, fish or seaweed. For this reason it also prompts the user for the latin name of the species and the spatial trend graphs are split by each species to allow true comparisons.

Contaminants_Water

This report is similar to the sediment and water reports except obviously it just reports contaminants and nutrients measured in water


BusinessObjects InfoView - Sediment_report - Windows Internet Explorer
https://reporting.defra.gov.uk/wijsp/scripts/login/webiHome.jsp
File Edit View Favorites Tools Help
BusinessObjects InfoView - Sediment_report
Welcome m_charlesworth
Home My InfoView Options Help Logout
Edit Save Send View in PDF Format Add to My InfoView
Last refresh date: 16/06/2010 10:48:56
Sediment_report
Temporal Trend Graph
IrishSea_BelfastLoughInnr_se01
AL
Result
Monitoring Year
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009
Raw Data Spatial Trend Graph Temporal Trend Graph
Internet
100%


BusinessObjects InfoView - Sediment_report - Windows Internet Explorer
https://reporting.defra.gov.uk/wijsp/scripts/login/webiHome.jsp
File Edit View Favorites Tools Help
BusinessObjects InfoView - Sediment_report
Welcome m_charlesworth
Home My InfoView Options Help Logout
Edit Save Send View in PDF Format Add to My InfoView
Last refresh date: 16/06/2010 10:51:08
Sediment_report
Spatial Trend Graph
1999
AL
Result
Raw Data Spatial Trend Graph Temporal Trend Graph
Done
Internet
100%



Currently Business Objects does not allow us to change the x-axis labels to be placed vertically. This means where you have several stations, it can be hard to read the labels. “Work-arounds” include:

- When you run the query, only select a single region or regions situated next to each other to reduce the number of stations sampled.
- You can save the report in Excel and manually manipulate the graphs here. However larger reports can crash before being saved to Excel.
- You can ‘edit’ the report yourselves by clicking ‘Edit’ from the menu of the report. Web intelligence opens. Select ‘View Structure’ from the menu bar. Click within the graph and extend the boundary box manually to widen the graph horizontal limits. This applies to all graphs in the reports. Click View Results to see if you have extended the boundary enough.

MON_sediment_extraction

This is a simple extraction of sediment data in a tabular form that can be easily used to do regional, national or international assessments in other statistical programmes such as ‘r’.

MON_biota_extraction

This is a simple extraction of biota data in a tabular form that can be easily used to do regional, national or international assessments in other statistical programmes such as ‘r’.

4. Analytical Quality Control Reports

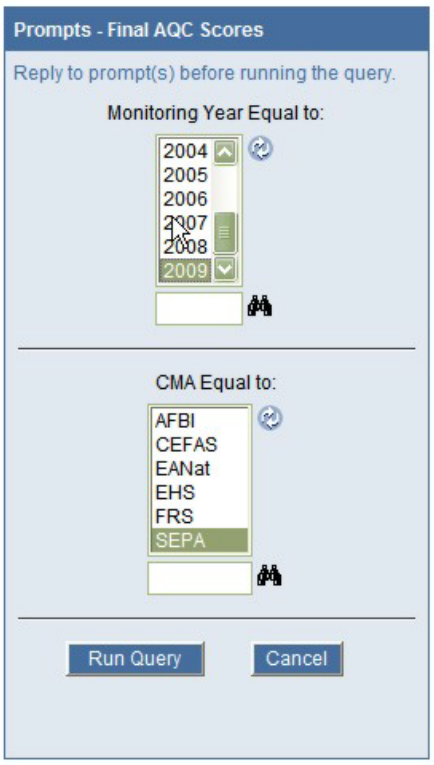
These reports look at the AQC and PT data specifically. There are 4 reports allowing the RO to check their QC data fully before they unhold them. This includes checking that AQC data have been properly linked to sample data, looking at final 'scores' calculated by the data filter and looking at how AQC and PT results have varied over time. Only data that have passed the data filter are forwarded to ICES. The NMCAG chair has access to all CMAs' data in these reports. CMA users only have access to their own QC data.

AQC_final_scores

MERMAN has a built-in data filter which was developed in collaboration with Michael Gardner (the current NMCAG chair). The data filter combines internal laboratory quality control information with any external proficiency testing results. However it can still run the calculation if there are only internal QC information available.

The filter takes into account several aspects of internal QC, for instance whether a lab is accredited, the grade of reference material and the precision of the technique used. The lab is scored for each aspect of the QC process for each determinand. Internal QC contributes 70% to the final score and external PT contributes 30%. It is therefore feasible for a lab to 'pass' a determinand if there is only internal QC supplied.

This report aims to show each lab how they have scored for each determinand via the data filter. A pass is given to determinands over 40 or 45, depending on their type, e.g. organics or metals. The report prompts the user for their CMA and the year they are interested in:



The report is split by data-type and a score is given for each determinand measured by the respective laboratory. A failed score is highlighted to the CMA in red. Where a determinand has been 'passed automatically' via the Biology_AQC sheet, this is highlighted in the AQC Score field accordingly. All data that have passed the filter are sent to ICES annually (i.e. all sample data for the determinands and data type combination).

The user can scroll through the pages by using the arrows at the top left of the report.

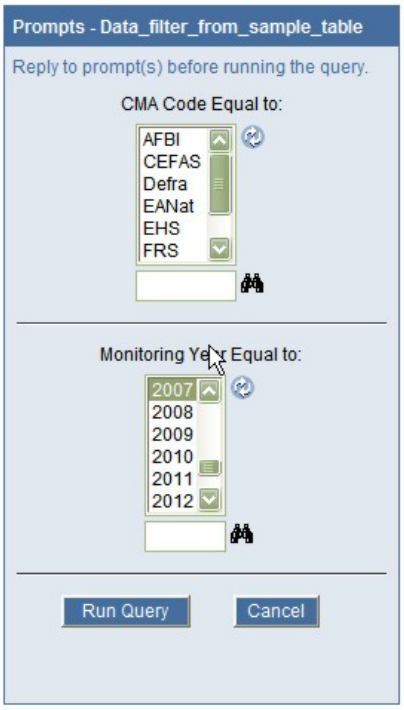
Analytical Laboratory	Determinand	AQC Score	AQC Status
	CB101	44.5	PASS
	CB105	50.29	PASS
	CB118	57.25	PASS
	CB138	42.75	PASS
	CB153	54	PASS
	CB180	34	FAIL
	CB28	51	PASS
	CB31	39	FAIL
	CB52	39	FAIL
	DRYWT%	Biology AQC/Biological Effects Data	PASS
	EXLIP%	26	FAIL
	%FemalePOP	Biology AQC/Biological Effects Data	PASS
	LIPIDWT%	Biology AQC/Biological Effects Data	PASS
	LNFPE	Biology AQC/Biological Effects Data	FAIL
	LNMEA	Biology AQC/Biological Effects Data	PASS
	LNMPE	Biology AQC/Biological Effects Data	PASS
	RPSI	Biology AQC/Biological Effects Data	FAIL
	VDS	Biology AQC/Biological Effects Data	PASS
	VDSI	Biology AQC/Biological Effects Data	PASS

A determinand can only be passed via the biology AQC spreadsheet if there is **no** external proficiency testing scheme available for them, however it is always encouraged that a lab to submits internal QC for these cases where possible. The NMCAG chair is consulted for new requests to automatically pass determinands via the Biology AQC spreadsheet.

AQC_data_cross-check

The sample data and the AQC data are held in separate tables within the MERMAN database. The link between them is made by analytical laboratory and analytical year. The data filter is 'triggered' when it receives sample data and AQC data for the same determinand, data type, analytical laboratory and same analytical year and a score is calculated. CMAs should be aware that if they do not match these fields up within their sample and AQC sheets, their data will not be scored by the filter.

This report shows clearly which determinands have associated AQC information in the database. If there is no AQC information the sample data will not go to ICES. The report is split by data type. The user is asked to select their CMA and Monitoring Year of choice:



All the determinands sampled in the data type are listed in the table. The analytical laboratory (sometimes more than one lab analyses the same determinand), the analytical year (sometimes samples are frozen and analysed in later years after collection) and the AQC status of the determinand is shown.

The idea of this report is to show the user immediately where they have gaps in their AQC submission. This is highlighted in red by 'NO AQC DATA'. The user may have good reason why there is no AQC data, however if there was an oversight the CMA can add the necessary AQC information to the chemistry or biology-AQC sheet and resubmit it.

Contaminants and biological effects in sediment data

Determinand Code	Analytical Laboratory Code	Analytical Year	AQC Status
AL		2009	PASS
ANT		2009	PASS
AS		2009	PASS
BAA		2009	PASS
BAP		2009	PASS
BGHIP		2009	PASS
CB101		2009	PASS
CB105		2009	FAIL
CB118		2009	PASS
CB138		2009	PASS
CB153		2009	PASS
CB156		2009	FAIL
CB180		2009	PASS
CB28		2009	PASS
CB52		2009	PASS
CD		2009	PASS
CHRTR		2009	PASS
CORG		2009	PASS
CR		2009	PASS
CU		2009	PASS
FE		2009	PASS
FLU		2009	PASS
HG		2009	PASS
ICDP		2009	PASS
LI		2009	NO AQC DATA
MN		2009	PASS
NAP		2009	PASS

If you think you have supplied AQC data, however the report shoes 'NO AQC DATA' please make sure that the Analytical year and the Analytical lab are the same in both the AQC and the sample sheets. If these don't match, the filter won't recognise that there are AQC data present.

If there is appropriate good quality AQC information, the status is shown as passed. If the associated AQC has failed the filter, this is highlighted to the user. However it is advised that the CMA double-check that they have submitted both AQC and PT data for a determinand that has failed, just in case one of the two has been omitted causing the score to fail the filter.

AQC_PT_Report

This report extracts the PT data that have been submitted by a CMA per Monitoring Year. The user is asked to select their CMA and Monitoring Year:

The first part of the report 'PT Analysis' looks at the raw data that have been submitted in the PT spreadsheet. The table splits the data by determinand and data type so that the user can check the variation in results between exercises. A Z-Score of ±2 is considered a 'pass'.

PT Analysis Information

CF

Analytical Lab Code Alabo	Determinand Code	ICCOD v2 2	ICCOD v3.2 Exercise	Assigned Value	Mean	Z Score
	ACNE	R52_Ex788_BT-4	BT-4 QPH049BT	0.32	0.4	0.6
		R52_Ex788_BT-4	BT-4 QPH050BT	0.95	1.3	1.6
		R54_Ex815_BT-4	BT-4 QPH051BT	0.42	0.3	-0.8
		R54_Ex815_BT-4	BT-4 QPH052BT	0.44	0.7	1.7
Analytical Lab Code Alabo	Determinand Code	ICCOD v2 2	ICCOD v3.2 Exercise	Assigned Value	Mean	Z Score
	ANT	R54_Ex815_BT-4	BT-4 QPH051BT	0.24	0.2	-0.3
		R54_Ex815_BT-4	BT-4 QPH052BT	0.26	0.2	-0.4
Analytical Lab Code Alabo	Determinand Code	ICCOD v2 2	ICCOD v3.2 Exercise	Assigned Value	Mean	Z Score
	AS	R52_Ex786_BT-1	BT-1 QTM077BT	1,915	1,950	0.1
		R52_Ex786_BT-1	BT-1 QTM078BT	47	37	-0.6
		R54_Ex812_BT-1	BT-1 QTM079BT	3,596	4,200	1.3
		R54_Ex812_BT-1	BT-1 QTM080BT	2,456	2,313	-0.5
Analytical Lab Code Alabo	Determinand Code	ICCOD v2 2	ICCOD v3.2 Exercise	Assigned Value	Mean	Z Score
	BAA	R52_Ex788_BT-4	BT-4 QPH049BT	0.97	0.8	-0.7
		R52_Ex788_BT-4	BT-4 QPH050BT	5.65	4.9	-0.9
		R54_Ex815_BT-4	BT-4 QPH051BT	0.92	0.8	-0.6

The second part of the report 'Final PT Score' shows the PT score as calculated by the data filter. It is important to remember that the PT score contributes to 30% of the final AQC score and that the scores are calculated over a rolling 3-year period. The basic calculation for the PT score is:

((number of passes in last 3 years) / (total number of results in last 3 years)) * 30

Bearing this in mind, a score of 30 for a determinand is the equivalent of 100% based on the PT data submitted, a score of 15 is the equivalent of 50%.

Final PT Score (Calculated over 3 years)

CF

Analytical Lab Code Alabo	Determinand Code Param	PT Score
	ACNE	30
	ANT	25.71
	AS	30
	BAA	30
	BAP	30
	BBJKF	30
	BEP	30
	BGHIP	30
	CB101	12.86
	CB105	30
	CB118	20
	CB138	26.67
	CB153	23.33
	CB156	30
	CB180	26.25
	CB28	17.14
	CB31	15
	CB52	8.57
	CD	30

The user should click on the arrows at the top right of the page to scroll through page numbers.

AQC_Results_Tracker

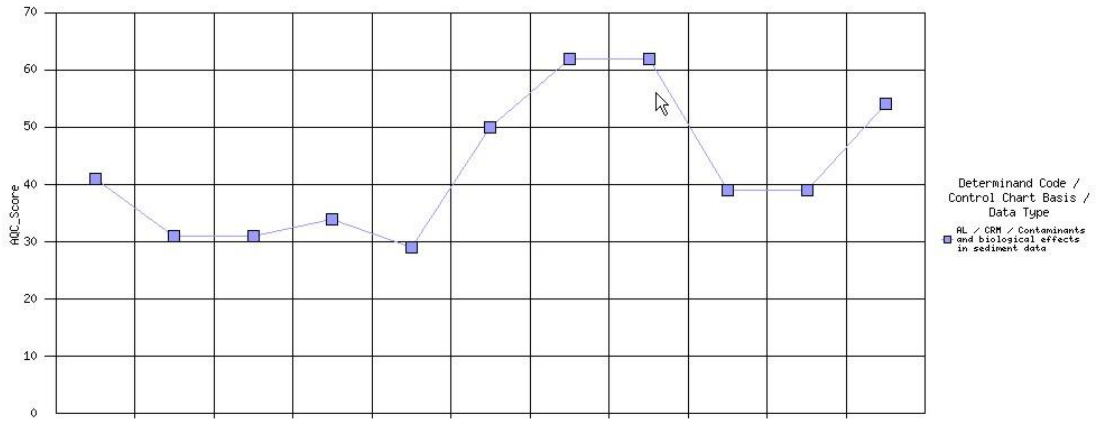
This report has been designed to allow members of NMCAG and ROs assess their AQC (internal and external) data over time. This will enable them to see areas of improvement quickly and be able to identify whether problems with particular determinants are down to Internal AQC practices or are PT-related. Trends over time can be easily identified via the graph for each determinand. The legend clearly differentiates between the data type and the LRM or CMR used for each determinand.

The user is asked to select their CMA twice because of a peculiarity within the database. Obviously please identify your CMA both times.

There are three pages to the report. The first shows all internal AQC data per determinand over time. The table extracts all accompanying AQC information, including labs, detection limits, LRM used amongst other essential fields. The graph shows the results out of 70 over time.

AL

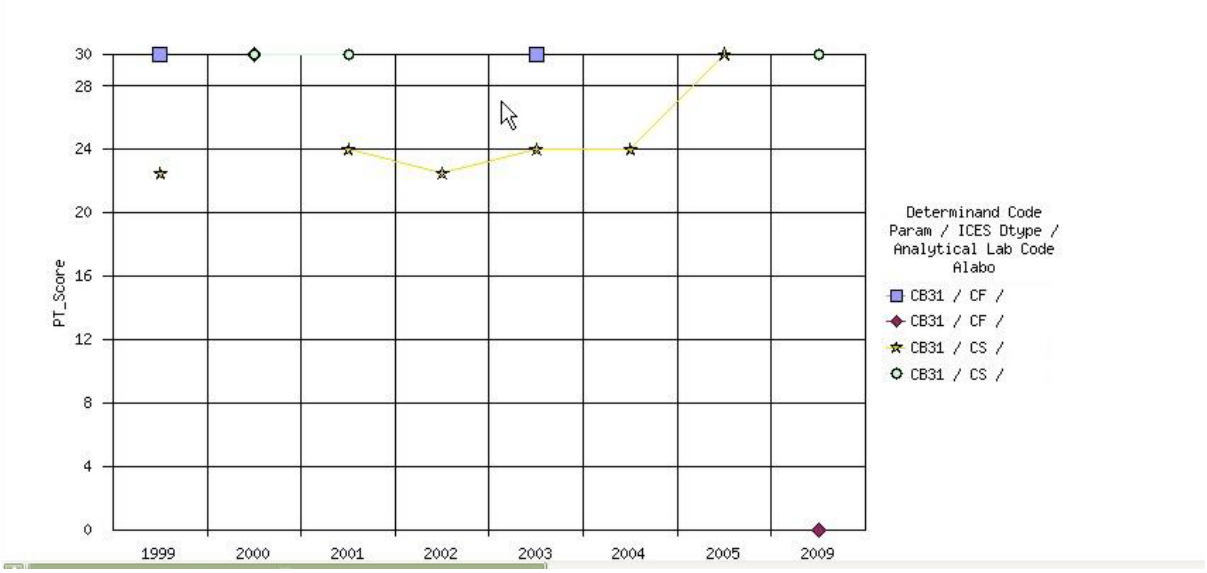
Data Type	Monitoring Year	AQC Score	Laboratory Code	Accreditation St	Detection Limit	Control Chart Basis	Cont
Contaminants and biological effects in sediment data	1999	41		N	0	CRM	
	2000	31		N	0	CRM	
	2001	31		N	0	CRM	
	2002	34		N	0	CRM	
	2003	29		N	0	CRM	
	2004	50		N	0	CRM	
	2005	62		N	0	CRM	
	2006	62		N	0.01	CRM	
	2007	39		N	0.01	CRM	
	2008	39		N	0.01	CRM	
	2009	54		N	0.01	CRM	



The second page shows all the PT results over time for each determinand on a laboratory and data type basis. The graph shows the results out of 30, which is the PT contribution to the overall AQC score.

ICES Dtype	Monitoring Year	Analytical Lab Code Alabo	PT Score
CF	1999		30
	2000		30
	2003		30
	2009		0

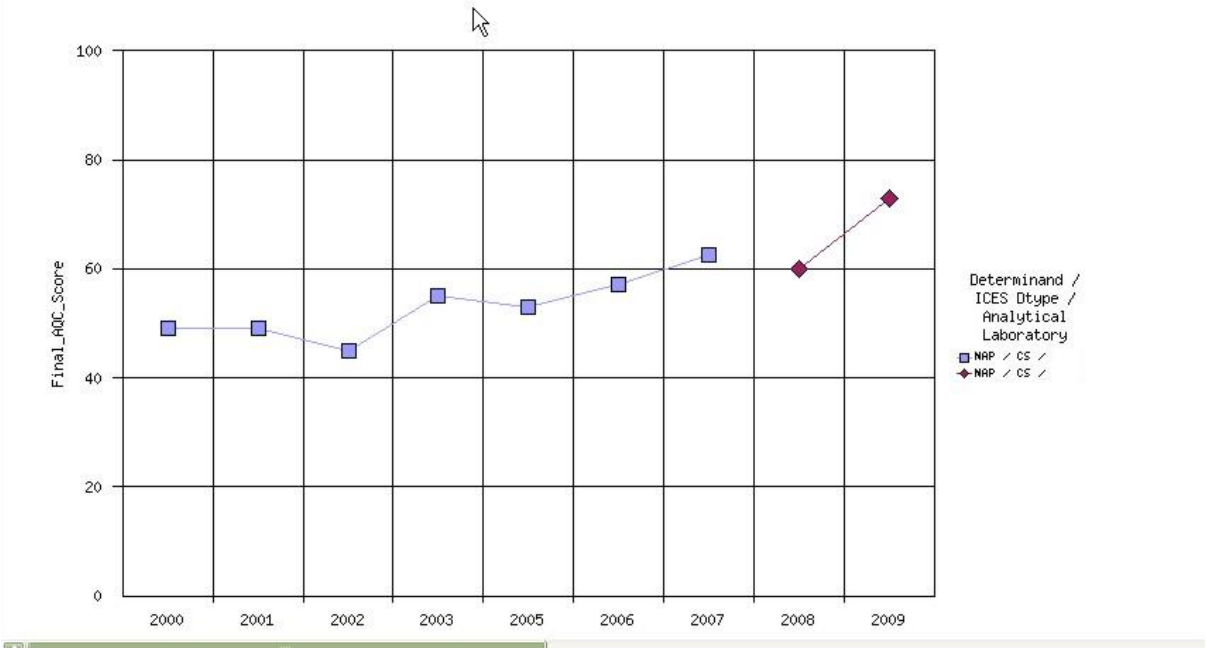
ICES Dtype	Monitoring Year	Analytical Lab Code Alabo	PT Score
CS	1999		22.5
	2000		30
	2001		24
	2001		30
	2002		22.5
	2003		24
	2004		24
	2005		30
	2009		30



The last page tallies the contributing scores from Internal AQC and External PT into an overall score out of 100 for that lab, data type and determinand combination for each year.

NAP

ICES Dtype	Monitoring Year	Analytical Labor	AQC Score	AQC Status
CS	2000		49	PASS
	2001		49	PASS
	2002		45	PASS
	2003		55	PASS
	2005		53	PASS
	2006		57	PASS
	2007		62.57	PASS
	2008		60	PASS
	2009		72.86	PASS



NMCAG members are encouraged to view this report every year to see how their lab has done each year in comparison to previous years.

5. Extraction in MERMAN submission format.

In many instances CMAs need to extract data from the MERMAN database and resubmit it. This may occur when the last submission file has either been lost or corrupted inadvertently. These reports allow CMAs to do that easily. There is a report for each of sediment, water, and biota. Upon opening the report you will be prompted to select monitoring year and CMA. In each case a small number of amendments need to be completed before the data can be copied into the latest template and submitted to MERMAN which should take no longer than a few minutes. These are:

Biota

1) In the following order delete fields L, E, A (when saving from business objects extra fields are occasionally created in excel)

2) Insert 2 new blank columns after column F, so columns G and H are blank (these are stratum and region fields which are no longer required to be submitted so should be left blank.

3) Delete rows 1-4

4) Select all the data, copy and paste it into the biota template with the top left cell being G3

5) Change the contents of column O (Sample Strategy) from being the term to the code (e.g. Fixed to FI)

6) Complete cells in row 3, columns A-E

Sediment

1) In the following order delete fields L, E, A (when saving from business objects extra fields are occasionally created in excel)

2) Insert 2 new blank columns after column F, so columns G and H are blank (these are stratum and region fields which are no longer required to be submitted so should be left blank.

3) Delete rows 1-4

4) Select all the data, copy and paste it into the sediment template with the top left cell being G3

5) Change the contents of column O (Sample Strategy) from being the term to the code (e.g. Fixed to FI)

6) In the column AK (Bioassay Species), where the term 'No Species Found' is shown delete the code and leave blank. Leave any bioassay species as they are.

7) Complete cells in row 3, columns A-E

Water

1) In the following order delete fields L, E, A (when saving from business objects extra fields are occasionally created in excel)

2) Insert 2 new blank columns after column F, so columns G and H are blank (these are stratum and region fields which are no longer required to be submitted so should be left blank.

3) Delete rows 1-4

4) Select all the data, copy and paste it into the sediment template with the top left cell being G3

5) Change the contents of column O (Sample Strategy) from being the term to the code (e.g. Fixed to FI)

6) In the column AK (Bioassay Species), where the term 'No Species Found' is shown delete the code and leave blank. Leave any bioassay species as they are.

7) Complete cells in row 3, columns A-E

Biology (Benthic Invertebrate)

The benthic invert submission is more complex if you have abundance and biomass data.

1. Delete fields I, D and A in that order and delete the first 3 rows
2. If you have abundance data then skip to point 10 else if you have abundance and biomass data then you will have to do all the following steps to get the abundance and biomass data for each record on the same row. If you have more than one type of biomass data (e.g. dry and wet)then please get in touch with BODC to help.
3. Highlight all the data and sort it by Determinand code, station number, sample start date, sample number, subsample number and species latin name in that order.

4. Rename the first sheet ‘Data’

5. In cell AE2 copy and paste in =CONCATENATE(I2,"_",J2,"_",M2,"_",N2,"_",V2) and then copy the formula to the end of the spreadsheet. Name the field ‘Identifier’

6. Copy and paste special (values) all the rows which have a determinand code of BMWETWT, BMDRYWT or BMAFDWT to the second sheet and name the sheet ‘Biomass’

7. Delete the same section of biomass data in the sheet ‘Data’ that you just copied over

8. Delete all data in the sheet Biomass except for the fields ‘Identifier’ and ‘result’ and swap these around so the identifier is in row A

9. On sheet ‘Data’ copy and paste the following formula into cell AF2 and copy it down. =INDEX(Biomass!B:B,MATCH(Data!AE2,Biomass!A:A,0),1)

10. Cut and paste field AD to field AB, copy and paste special (values) field AF to AD (only if you have biomass data). Delete columns AE and AF. Depending on if your biomass data is dry, wet, or ash free dry then the data should be in fields AD, AE and AF – you should add fields as required.

11. If you have biomass data then sort the data by the field biomass – where a match has not been able to be achieved it will give ‘#NA’ delete any values of #NA.

12. Resort the data by station number, sample start date, sample number, subsample number and species latin name

13. Insert 2 columns into field G and H

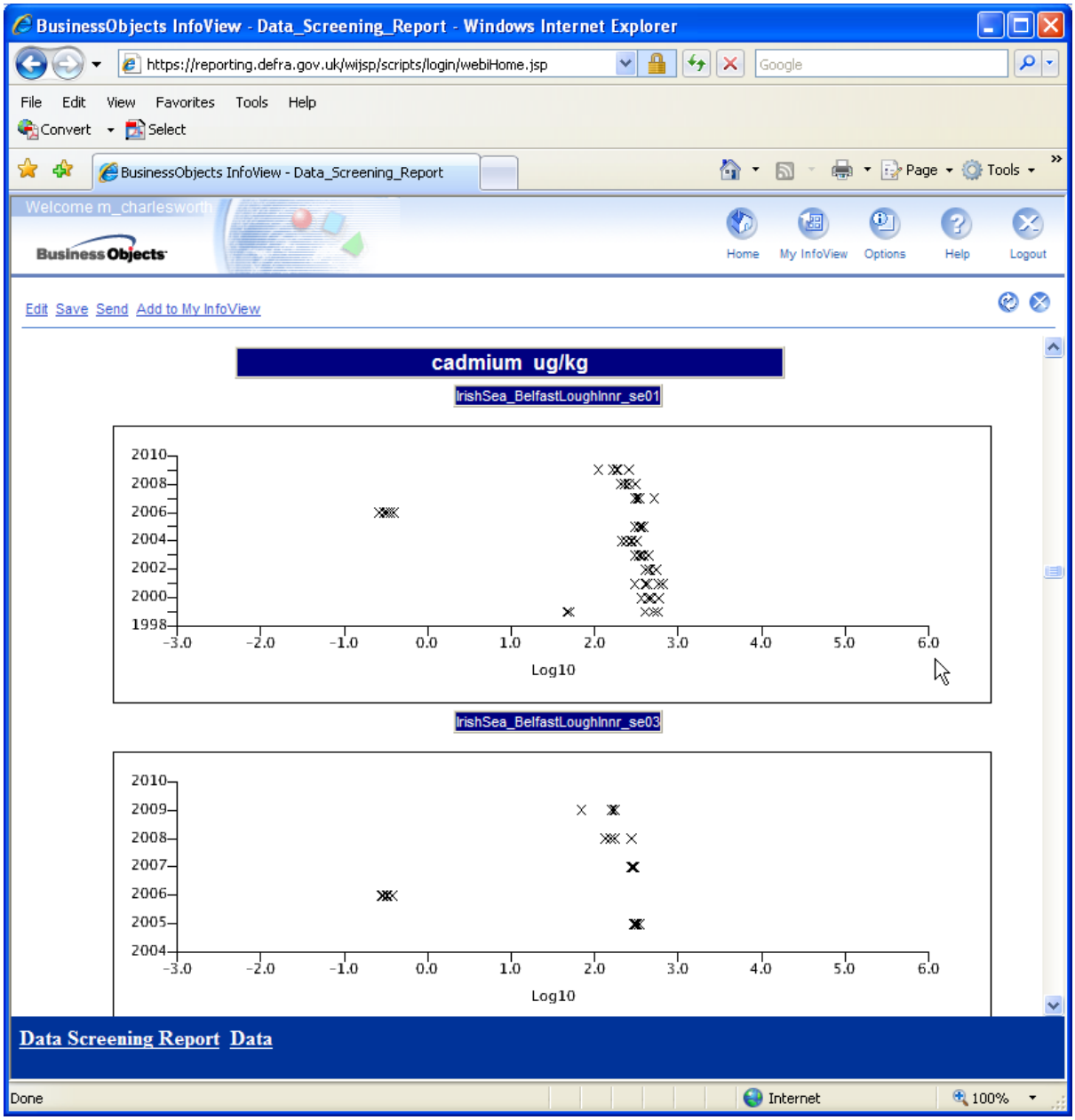
14. Highlight all your data and copy it into a MERMAN biology template with the top left being cell H3. Complete the fields A to G

15. If you have data in the field sampling strategy this will have to be converted from the name to the code (e.g. Fixed to FI)

6. General Management.

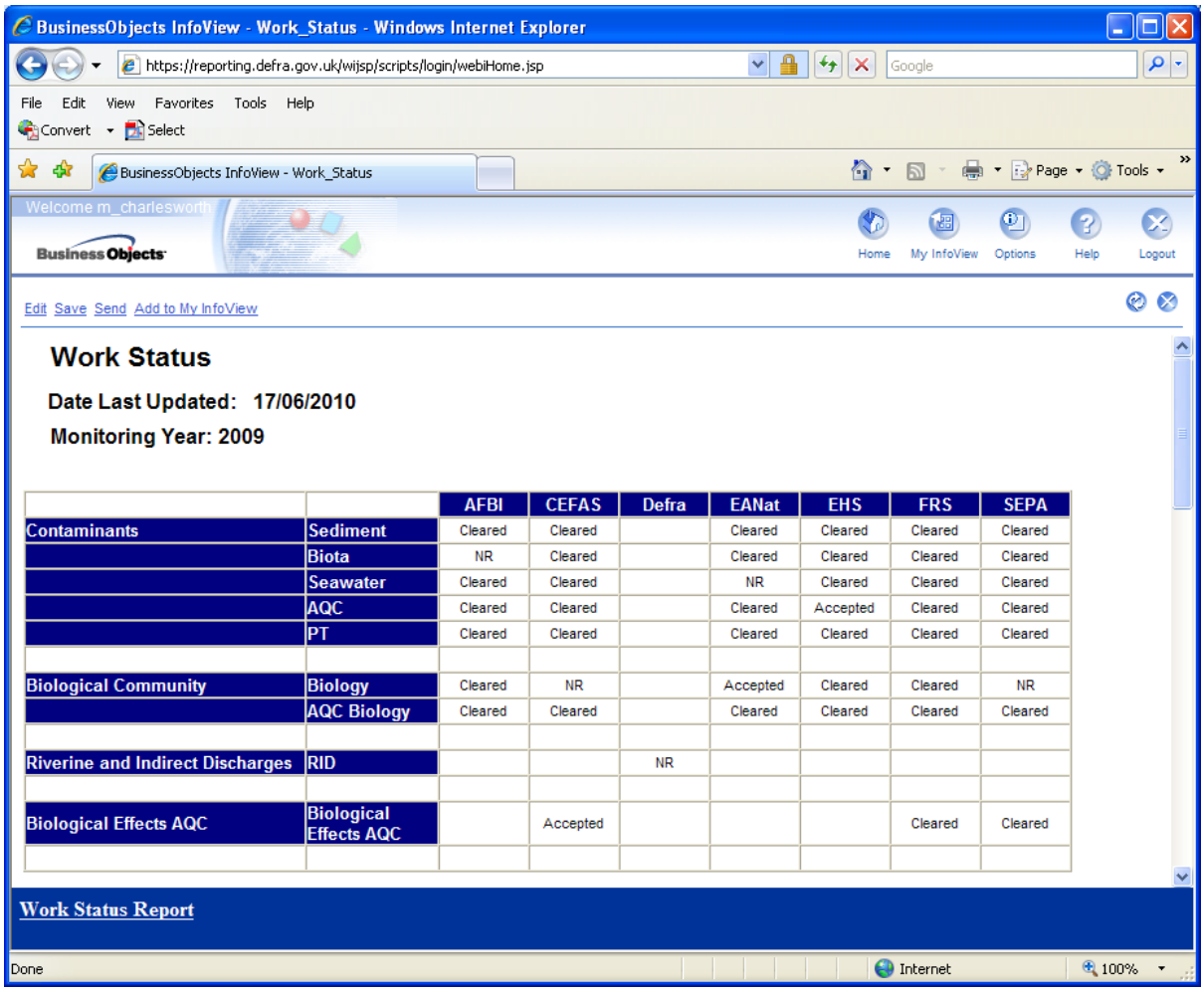
Data_screening_report

The data screening report should be run after each submission to check that results are reasonable and not out of range or been submitted in the wrong units. The user is prompted for CMA, determinand, data type (sediment, water, biota), matrix and station number. The results are shown graphically for each determinand for each station with monitoring year on the y axis and log of the value on the x-axis (a log scale makes it easier to identify outliers. For example, the screen shot below shows that the values at a station for Cadmium in 2006 are 1000 times lower than other years and so have probably been submitted in the incorrect units and should be checked and resubmitted as necessary.



Work_status

The work status report allows CMAs to identify what submissions they have made in each year and whether they have 'cleared' those submission by submission of an unhold file, therefore indicating that the data has been checked and is ready to be submitted to ICES and/or used by 3rd parties.



		AFBI	CEFAS	Defra	EANat	EHS	FRS	SEPA
Contaminants	Sediment	Cleared	Cleared		Cleared	Cleared	Cleared	Cleared
	Biota	NR	Cleared		Cleared	Cleared	Cleared	Cleared
	Seawater	Cleared	Cleared		NR	Cleared	Cleared	Cleared
	AQC	Cleared	Cleared		Cleared	Accepted	Cleared	Cleared
	PT	Cleared	Cleared		Cleared	Cleared	Cleared	Cleared
Biological Community	Biology	Cleared	NR		Accepted	Cleared	Cleared	NR
	AQC Biology	Cleared	Cleared		Cleared	Cleared	Cleared	Cleared
Riverine and Indirect Discharges	RID			NR				
Biological Effects AQC	Biological Effects AQC		Accepted				Cleared	Cleared

ICES

The ICES report is only used by the MERMAN management team to extract the data in the ICES reporting format.