



Document title	Status of annual reporting and the spatial data for 2018 and maps to be used in PLC-7 products
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Background

The reporting of annual data for 2018 started by circulating the annual reporting templates at the end of August 2019. The Contracting Parties were invited to verify the pre-filled templates by 21 September and complete the reporting by 31 October 2019. In addition, [PLC-7 IG 7-2019](#) agreed that spatial data are to be verified simultaneously to annual PLC-data reporting procedure, and national spatial datasets were made available at the [PLC-7 workspace](#) at the HELCOM Meeting Portal. The information provided by the reporting templates should match the information in the spatial data. PLC-7 IG 7-2019 also agreed that the retention of transboundary load in the downstream country should be reported annually as a mandatory parameter.

This document describes the status of reporting and verification of 2018 data, as in 5 March 2020. In addition, the document describes the situation regarding spatial data and consideration of its usage in PLC-7 products.

The document also contains the list of maps produced to illustrate PLC-6 project thematic reports. These maps were also included in the HELCOM Map and Data service as illustration of land-based pollution.

Action requested

The Meeting is invited

- to consider the status 2018 annual reporting
- to inform when the countries which have not yet accomplished the reporting will finalize it
- to consider the status of verification of spatial data and agree on finalization of the related updates of this data
- to discuss the maps to be produced and methods utilized for the visualization of spatial distribution of nutrient loads.

Status of 2018 annual reporting

The reporting process for 2018 started with the distribution of reporting templates and spatial data sets at the end of August. After the verification of the template and spatial data, the Contracting Parties could proceed with the reporting.

All Contracting Parties except Denmark have reported data to PLUS system. The overall status of reporting and data approval can be seen from table 1.

Contracting Party	Reported data	Final approval
DE	x	Completed
DK		
EE	x	Completed
FI	x	Completed
LT	x	Completed*
LV	x	Completed*
PL	x	To be completed
RU	x	Completed*
SE	x	Completed*

Table 1 Overall status of 2018 reporting. * All reported data has been approved, but some data still missing.

Reported data by Contracting Party

Table 2 represents reported data by country and source for three parameters: flow, Ntot and Ptot. For aquaculture the flow is not included. 'Reported sites' indicates number of sites reported per source. 'Reported info' indicates reported data on Flow, Ntot and Ptot of these sites. 'Missing info' indicates data (Flow, Ntot and Ptot) that is missing from reported sites. Last four columns indicate the approval status of data. Some notes about the reporting and approval status per Contracting party are listed below.

Comments by country

Finland

- 7 rejected values on industrial loads, correct values not expected

Lithuania

- Flow for AKMENA-DANE missing
- Missing values for MWWTP and Industry have not been reported on previous years either

Poland

- Some questionable and no QA data on sub-catchments, to be approved

Russia

- Flow for unmonitored sub-catchments missing
- Many values reported as null

Sweden

- Missing values for MWWTP and Industry have not been reported on previous years either

Country	Source	Reported sites	Reported info (flow,ntot,ptot)	Missing info (flow,ntot,ptot)	No QA check	Corrected	Questionable	Accepted / approved
Germany	Subcatchment	26	78	0	0	0	0	78
	Direct MWWTP	18	54	0	0	0	0	54
	Dir industry	2	6	0	0	0	0	6
	Dir aquaculture							
	Transboundary							
Estonia	Subcatchment	18	54	0	0	0	0	54
	Direct MWWTP	15	45	0	0	0	0	45
	Dir industry	1	3	0	0	0	0	3
	Dir aquaculture							
	Transboundary	5	15	0	0	0	0	15
Finland	Subcatchment	32	95	1	0	0	0	95
	Direct MWWTP	43	124	5	0	3	0	121
	Dir industry	48	112	32	0	17	0	88
	Dir aquaculture	94	188	0	0	0	0	188
	Transboundary	3	7	2	0	3	0	4
Lithuania	Subcatchment	4	11	1	0	0	0	11
	Direct MWWTP	10	28	2	0	0	0	28
	Dir industry	11	23	10	0	0	0	23
	Dir aquaculture							
	Transboundary	6	18	0	0	0	0	18
Latvia	Subcatchment	13	39	0	0	0	0	39
	Direct MWWTP	6	18	0	0	0	0	18
	Dir industry	6	12	6	0	0	0	12
	Dir aquaculture							
	Transboundary	3	9	0	0	0	0	9
Poland	Subcatchment	24	72	0	1	0	5	66
	Direct MWWTP	7	21	0	0	0	0	21
	Dir industry	1	3	0	3	0	0	0
	Dir aquaculture							
	Transboundary	2	6	0	3	0	0	3
Russia	Subcatchment	7	19	2	0	0	0	19
	Direct MWWTP	14	41	1	0	0	0	41
	Dir industry	2	6	0	0	0	0	6
	Dir aquaculture							
	Transboundary	1	3	0	0	0	0	3
Sweden	Subcatchment	42	126	0	0	0	0	126
	Direct MWWTP	108	321	3	0	6	0	315
	Dir industry	56	111	57	0	0	0	11
	Dir aquaculture	13	26	0	0	0	0	26
	Transboundary	1	3	0	0	0	0	3
Denmark	Subcatchment							
	Direct MWWTP							
	Dir industry							
	Dir aquaculture							
	Transboundary							

Table 2: Reported data by country

PLC-7 IG 7-2019 agreed that the retention of transboundary load in the downstream country should be reported annually as a mandatory parameter. However, retention has been reported only regarding only very few sub-catchments.

Verification of spatial data

Background

Correct and up to date information of the spatial delineation of sub-catchments is of high importance for PLC work from various perspectives. The consistency of the data is a crucial point for calculation of specific loads and visualization of the data on map. Some parts of the PLC spatial data set have however had obsolete information, that will result in errors in calculation of area specific values for the reported loads.

The process of verifying and correcting the spatial data was originally started by PLC-7 IG 3-2018, by introducing a procedure to verify spatial data to be finished in November 2018. PLC-7 IG 5-2018 noted, that no updates were made by Contracting Parties during this process, but multiple inconsistencies between spatial parameters reported to PLC water database and spatial parameters in the GIS, were however found.

The inconsistencies were discussed at the next meeting, with more detailed analysis of the differences found between the database and spatial data. During this process, corrections to the spatial data was received for some Contracting Parties, but in order to keep the spatial data up to date, PLC-7 IG 7-2019 decided that spatial data is to be updated *annually* simultaneously to verifying the background info in the reporting templates. The background information is collected to ensure that the loads are to be allocated to the correct spatial unit and all recent developments in monitoring network are reflected correctly. Therefore, the simultaneous verification of spatial and template information is needed to keep this information consistent and up to date.

Update of spatial data as background info for 2018 reporting

The current status of the spatial data in each Contracting Party are listed below.

Germany

- Spatial data is planned to be updated for 2018, but no updates have been received yet

Finland

- Spatial data updated March 2020
- Includes the sub-catchment only within national territory

Estonia

- Spatial data updated October 2019

Latvia

- Spatial data updated April 2019, during the process of comparing the differences in areas between spatial and database data

Lithuania

- No updates for spatial data

Denmark

- Spatial data update March 2020
- Includes all sub-catchments that have been monitored historically, enabling the creation of spatial data set for each particular reporting period

Poland

- Spatial data update is being prepared and finalized soon. Previous update in January 2019 for PLC-7

Russia

- No update for spatial data

Sweden

- No update for spatial data

The spatial dataset to be used in PLC-7 products and method for calculating the load

Compiling the PLC-7 spatial data set

The latest updates for the spatial data are made to depict the situation in 2018, and done during the annual update of spatial data, done simultaneously with verifying the background information. However, the spatial data to be used in the calculation and visualization of the PLC-7 products, should reflect the reference year for the project, which is 2017.

For most Contracting Parties the monitoring network and therefore also the spatial data set, have been rather stable in the past few years. Meaning that the data set verified for 2018 stands true also for the year 2017. For some Contracting Parties, such as Denmark, the sub-catchment delineations are different in 2018 than in 2017 and therefore a specific data set to be used for PLC-7 products should be compiled. This work is to be done based on the updates done for 2018 and by comparing them with the background info reported for the assessment year. For some countries there is a separate data set reported for the year 2017 that can be directly used for this specific data set.

Using the spatial data in PLC-7 products

This data set to be compiled will be used in the calculation and visualizations for PLC-7 products. For PLC-6, the spatial data was used to produce the following maps:

- Monitored and unmonitored sub-catchment areas
- Sub-catchments of transboundary and border rivers
- Specific load of (Nitrogen and Phosphorous)
- Background load of (Nitrogen and Phosphorous)
- Diffuse load of (Nitrogen and Phosphorous)
- Agriculture load (Nitrogen and Phosphorous)
- Retention (Nitrogen and Phosphorous)
- Data coverage of Mercury
- Data coverage of Cadmium
- Data coverage of Lead

In addition, the spatial data on sub-catchments was used in all maps, including calculation of inhabitants and agricultural land per area, for different reports for PLC-6. For PLC-7 similar map products are to be made, and the maps and methods to calculate the loads should be agreed.