

## How to complete this excel file

This excel file consists of two sheets the "Data Entry Form Sheet (DES)" and "Data List Sheet (DLS)". The DES is the form for entering data and the DLS is the list of your recorded data. Please fill in the DES first and transfer it to the DLS by clicking the button on the DES, for each data item of a sample.

### A. Data entry form sheet

- Please enter all data in alphanumeric characters.
- In the cells with a pull-down menu, you can select a number from the menu or directly enter a numerical value within the cells.
- Please fill in the cells designated as "Fundamental" in the next category column with data. Data should be input into all of the deep blue "Fundamental" cells. Inputs may also be required in the light blue "Fundamental" cells, depending on the input item. If an input data set is deficient, a warning message will be displayed.

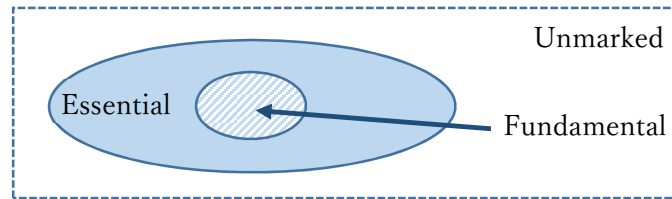
E.g.)

- If the density (particles/m<sup>3</sup> or particles/m<sup>2</sup>) of microplastics is not entered, but only the number (particles/samples) is entered, an item for calculating the density such as filtered volume or survey area must be entered.
- Please fill in other cells designated as "Essential" or unmarked in the category column, if possible. These data will be useful for further analyses.

Category	Contents
Essential (Including Fundamental)	<ul style="list-style-type: none"><li>• Data to be acquired that are essential to harmonization of monitoring methods</li><li>• Information necessary for comparability with other survey results and for interpreting data</li></ul> <p>E.g.) Surveys may have been conducted under similar sea conditions, but if the survey results (MP concentrations) differ significantly, these data will be used for factor investigation. For example, if there is information such as strong winds, crossing ocean currents, or different pretreatment methods, it enables these to be considered.</p>
Fundamental	<p>Among the "Essential" items, data necessary for displaying the number of microplastics per sweep area or filtered volume on a 2D map have been selected as "Fundamental" items.</p> <p>1) Sample name/ID, 2) Sampling date, 3) Location, 4) Mesh opening size, 5) Net immersion depth, 6) Number or density of plastic particles</p>

Category	Contents
	<p>Items that need to be entered when only the number of particles is entered in 6) (Any of ① to ③ may be entered)</p> <p>① 7) Filtered water volume</p> <p>② 8) Sweep area</p> <p>③ 9) Shape of net aperture (width or diameter) and 10) Tow distance</p>
Unmarked	<p>Data that may be necessary for future survey and research data accumulation (optional)</p> <p>To promote harmonization, it is considered necessary to collect metadata.</p>

Image of Categories



Buttons & text windows

(Fig.1, excel sheet “Form”)

- ① Button to switch between the two view formats (display "all" items and display only "fundamental" items).
- ② Indicates the view format ("all" items or "fundamental" items) of the Data Entry Form Sheet (DES).
- ③ Button to start input of new data ("create" mode).
- ④ Button to start editing of recorded data ("edit" mode).
- ⑤ Window displaying the sample name/ID. "New" is displayed in the create mode.
- ⑥ Window displaying the sample number. "0" is displayed in the create mode.
- ⑦ Button to record data in the Data List Sheet (DLS). Data are added in the create mode, and replaced in the edit mode.
- ⑧ Button to clear all input windows.
- ⑨ Button to switch between two input styles (sexagesimal (base 60) notation or decimal notation) to input coordinates of GPS logs.
- ⑩ Close file and finish work.

Items	Remarks	Unit
Sample name/ ID		Fundamental c18-May.Towing No.99-Portside
Enter time difference from GMT.		Fundamental -9:00
Sampling date	date/ month/ year	Fundamental 19 9 2018
GPS Log	Input style	Input in Sexagesimal Decimal / sexagesimal
	GPS Log (Start position)	Latitude Longitude
GPS Log (End position)	Latitude Longitude	Enter the coordinates in sexagesimal (base 60) or decimal notation.
	Latitude Longitude	
Net aperture	Shape of net aperture	Rectangular, square, circular, others
	Size of net aperture	Width
Mesh	Openings	Select one side length or diagonal length
	Distance	Distance relative to water
Tow distance	Calculation method	Describe the method used to calculate the tow distance, e.g. 1: Flow meter, 2: GPS (Recorded only initial and final points), 3: Measured and duration time

**Fig. 1** Part of the Data-Input Form (DES).

**B. General input procedure ("create" mode).**

B-1. Click on the "Create" button (No. 3 in Fig. 1) to start inputting data. The title boxes (Nos. 5 & 6 in Fig. 1) display "New" and "0," respectively.

B-2. Select preferred view format (all items or fundamental items) by clicking on the "All/Fundamental" button (No. 1 in Fig. 1), and your selection will appear in the text window No. 2 in Fig. 1.

B-3. Select preferred input style of coordinate notations by clicking on the "Decimal/Sexagesimal (base 60)" button (No. 9 in Fig. 1), and the selected notation will appear in the text window next to the button.

B-4. Input your data into the form.

B-5. Input is restricted for some data; in these cases, you can use the pull-down menu.

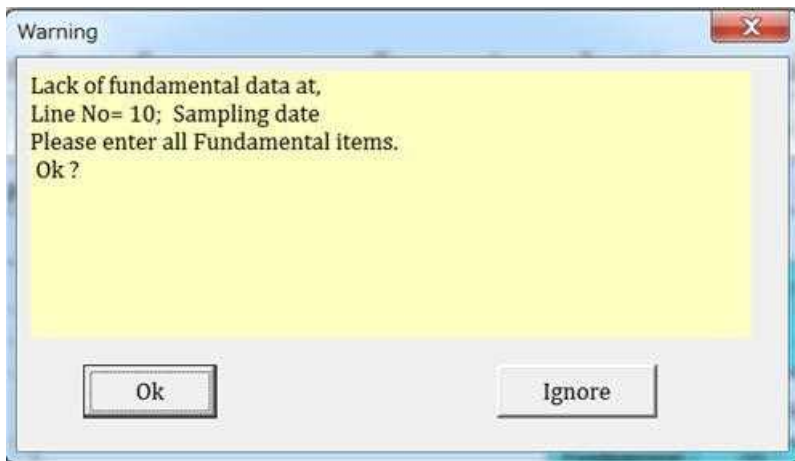
B-6. If the item for "Number or density of particles" is only number of particles, it is necessary to input items related to "Sweep area" or "Filtered water volume."

B-7. Click on the "Record" button (No. 7 in Fig. 1) when you have finished entering all items. The data set is then transferred to the Data List.

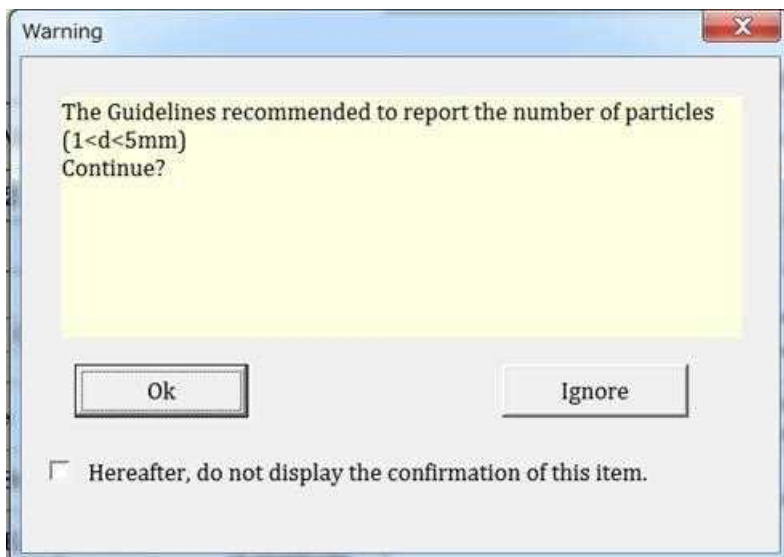
B-8. Reply to the message "Continue?" If you wish to continue, click on the "Yes" button and return to step B-4 of this procedure. If you wish to quit, click on "No" button.

B-9. When registering a record, the program checks the input status for Fundamental items. The main problems pointed out by the program are as follows.

B-8-1. Deficiency of data in the deep-blue Fundamental cells. In this example, no date has been entered.



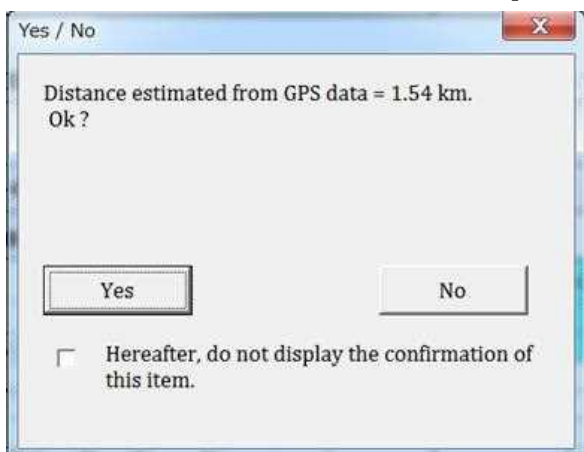
B-8-2. Particle size for entry not conforming to the recommended  $1 < d < 5\text{mm}$ .



By clicking on the "Ignore" button, data entry and record registration can be continued.

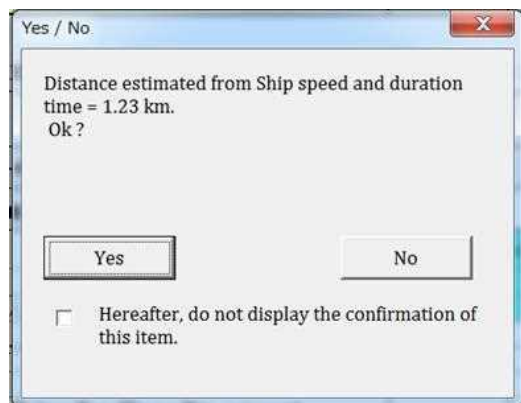
In addition, by checking the check box at the lower left, this confirmation display can be omitted after that (until the next time the file is opened).

B-8-3. If the latitude and longitude of the end point are entered instead of the distance, the value for distance calculated from the entered start and end points will be displayed for confirmation.



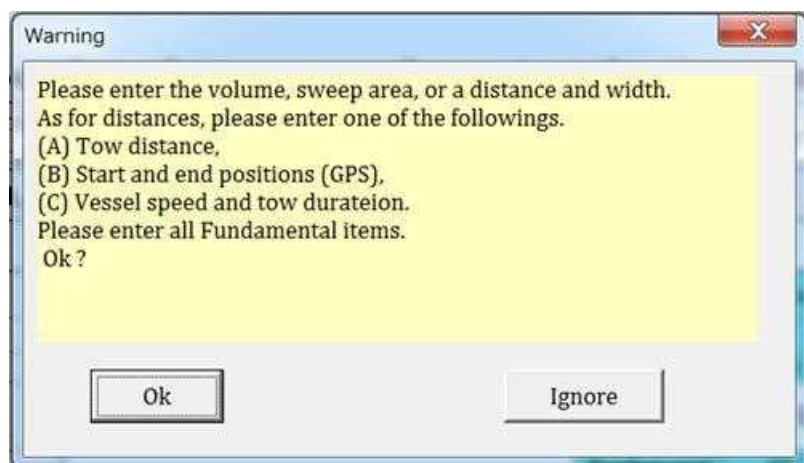
In addition, by checking the check box at the lower left, this confirmation display can be omitted after that (until the next time the file is opened).

B-8-4. If the ship speed and sweep time are entered instead of the distance, the value for distance calculated from the input data will be displayed for confirmation.



In addition, by checking the check box at the lower left, this confirmation display can be omitted after that (until the next time the file is opened).

B-8-5. If there is insufficient information to calculate the distance, the following warning is displayed.



(Notes on input)

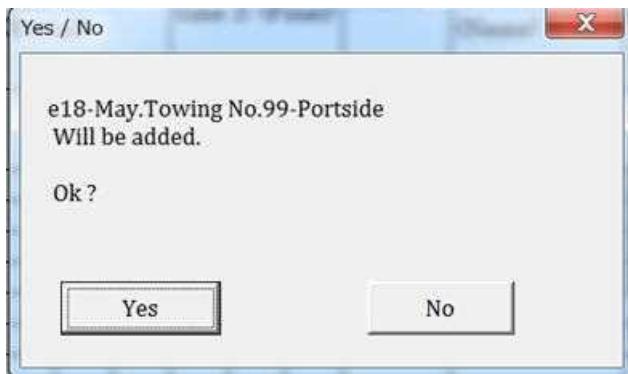
Line No.	Items		Notes
8	Sample name/ID		Please do not enter only numbers, but be sure to use a Roman letter at the beginning, e.g.) a1
9	Enter time difference from GMT		Please select the time difference from Greenwich Mean Time, e.g.) In Japan, it is -9 hours, so select "-9:00"
33, 34	Trawl sweep area	Calculation formula	Please enter formula used to calculate the trawl sweep area, e.g.) $\text{Area} = \text{distance} \times \text{time}$ Please enter formula used to calculate filtered water volume, e.g.) $\text{Volume} = \text{Distance} \times \text{Width} \times \text{Immersion depth}$
35, 36	Filtered water volume		
71	Sample splitting	Method or equipment of splitting	Please enter splitting method, e.g. 1) Use of Folsom splitter

Line No.	Items	Notes
		e.g. 2) Measured for 10% of the total number of particles
72	Estimated relative error range caused by your splitting process	Please enter the degree of error due to the splitter used, e.g.) $10 \pm 1.2\%$

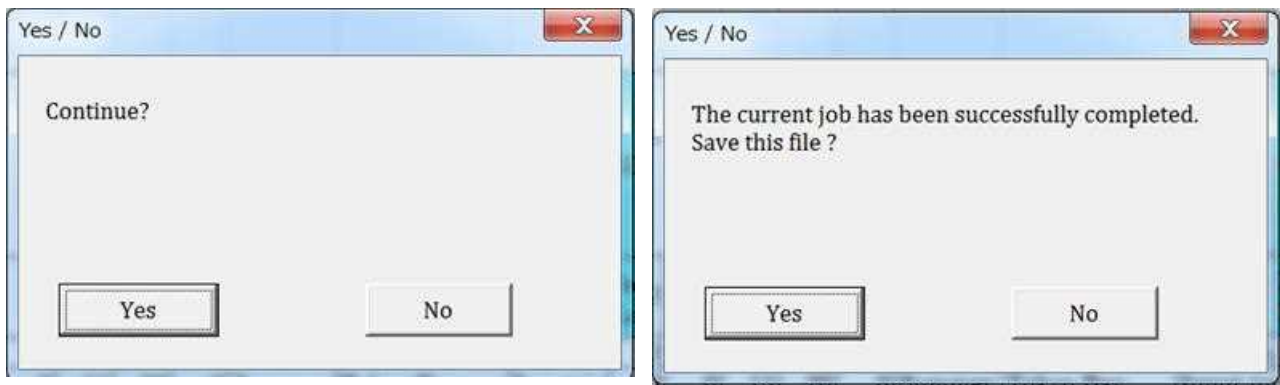
### C. Data List Sheet

C-1. If there is no deficiency of input data or if you proceed despite a deficiency, switch to the DLS and register the record

C-1-1 Display the sample name on the screen and confirm that you are registering it.



C-1-2. After registration, a question will appear on the screen, "Do you want to continue?" or "Do you want to save the file?".



C-2. If you click on the "Yes" button, the process will return to the DES, and if you click on the "No" button, the program will close the file and finish the work.

### D. Edit the recorded data ("edit" mode)

D-1. Click on the "Edit" button (No. 4 in Fig. 1) to edit recorded data.

D-2. The worksheet will switch over to the DLS, and a window will appear for inputting the sample name of the target data set (shown in No. 14 of Fig. 2) or inputting the record number of a recorded data (column A of the sheet shown in Fig. 2).

D-3. The worksheet will switch back again to the data entry (DES) form. The title boxes (Nos. 5 & 6 in Fig. 1) display the name and record number of the sample, respectively.

D-4. Input or replace the appropriate data on the sheet.

D-5. Click on the "Record" button (No. 7 in Fig. 1) when you have finished entering all items. The data set is then replaced with

the pertinent data in the DLS.

D-6. Reply to the message "Continue?". If you want to continue, click on the "Yes" button and return to C-4 of this procedure. If you want to quit, click on the "No" button.

**E. Delete recorded data**

E-1. Click on the "List" tab, and the current worksheet will switch over to the DLS.

E-2. Click on the "Delete a record" button, and a window will appear to input the sample name of the target data set (shown in No. 13 of Fig. 2), or input the record number of recorded data (A column of the sheet shown in Fig. 2).

E-3. The selected data will be deleted.

Buttons & text windows (Fig. 2, Data List Sheet (DLS))

- ⑪ Button to switch between two view formats (show "all" items and show only "fundamental" items).
- ⑫ Indicates the view format ("all" items or "fundamental" items) on the "List" sheet.
- ⑬ Button to delete a record.
- ⑭ Sample name/ID

1	1 Title		Sample name/ ID	Time Diff	Sampling date		Sampling time 1: (Initial)	Sampling time 2: (Final)		Season	Sampling Location (Name)	Input style	GPS Log 1:								
2	15	2	3		2	3	2	3	2	3			Ini_ Lati	2	3	4	5				
5	1	KOIKE, Ministry	Japanese a18-May.Towing	-9	13	7	2016	15	0	0	15	20	0	Summer	Wakayama Bay	Input in	34	4	55	34.0819	N
8	4																				

**Fig. 2** Part of the Data List Sheet (DLS).