

## Natural Channel with Flood Plain – with or without control devices

For generating an FTABLE for a “Natural Channel with Flood Plain.” the user must obtain channel cross section data (x,y). Figure 1 illustrates schematic diagram of “Natural Channel with Flood Plain.”

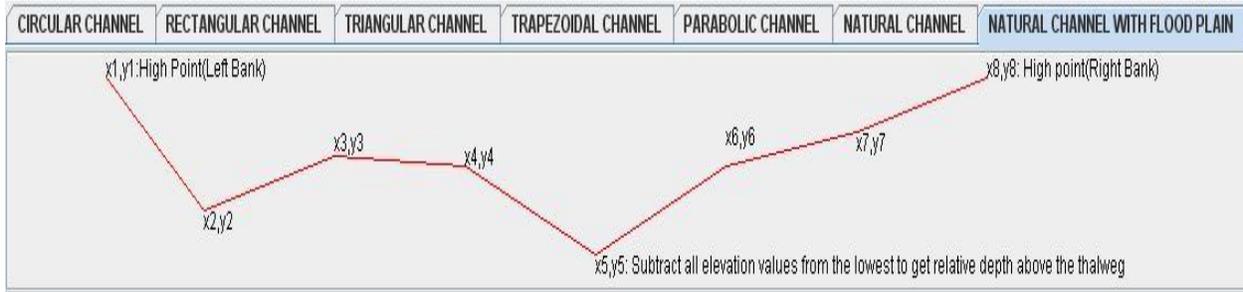


Figure 1: Schematic diagram of a natural channel cross section with flood plain

**The following steps explain the process of generating an FTABLE for a Natural Channel with Flood Plain.**

Step 1: Select the units to be used for various calculations from the Units combo box located on top of the page. For the current example US Units are used.

Step 2: Enter the information related to channel such as longitudinal slope, and elevations of left and right banks [Figure 2].

**OPEN CHANNEL INPUT DATA: Use Units consistent with Unit combobox**

Longitudinal Slope:

Left Bank:

Right Bank:

Figure 2: Channel Input Data

Step 3: Enter the lengths and manning’s n values of channel, left over bank (LOB) and right over bank (ROB) [Figure 3].

	LOB	Channel	ROB
Downstream Length	1000	2000	1000
Manning's n	0.05	0.05	0.05

Figure 3: Channel and banks input data

Step 4: The channel profile data can be uploaded into the channel profile data table from a tab or comma delimited format. Right click on the table and choose either Import from spreadsheet (tab delimited) or Import from CSV file option (comma delimited) [Figure 4].

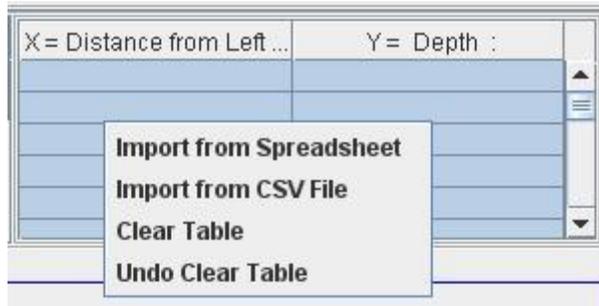


Figure 4: Data Import Options

Step 5: An Import Data window opens up after a selection is made [Figure 5]. The profile data to be imported can be of depth or elevations. Select the type of data from the **Type of data combo-box**. For the current example depth is selected. Select the units of the data from the **unit's combo box**. If the units don't match with the program units selected in Step 1, the data is converted to match the program units before uploading into the table.

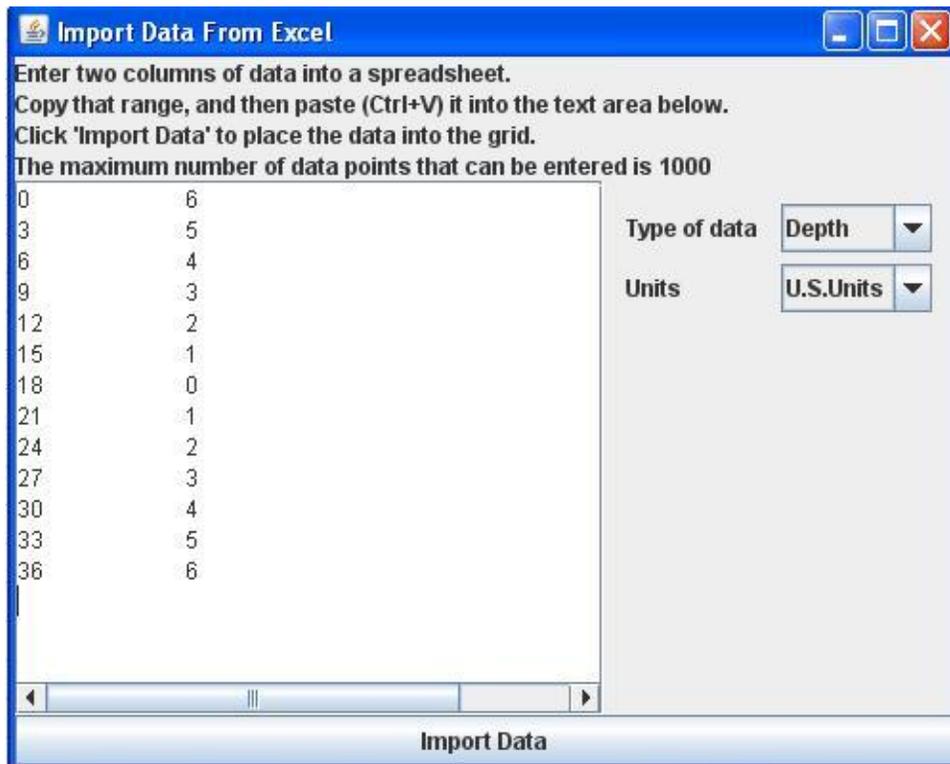


Figure 5: Data Import window

Paste the data and click **Import Data** button to import data into the data profile table [Figure 6].

OPEN CHANNEL INPUT DATA: Use Units consistent with Unit combobox				LOB	Channel	ROB	X= Distance from Left...	Y= Depth :
Longitudinal Slope:	0.025	Downstream Length	1000	2000	1000	0.0	6.0	
Left Bank:	0	Manning's n	0.05	0.05	0.05	3.0	5.0	
Right Bank:	100					6.0	4.0	
						9.0	3.0	
						12.0	2.0	
						15.0	1.0	

Figure 6: Channel profile data imported

**Step 6: Generation of FTABLE**

Without using control structure:

Click on the **Calculate FTable** button to generate an FTABLE which can be viewed in the Results tab of the Results Table [Figure 7].

Results		Copy Results	
Right click the grid for more options.			
depth(ft)	area(acres)	volume(ac-ft)	outflow1 (cfs)
0.00	0.00	0.00	0.00
0.50	0.14	0.03	1.35
1.00	0.28	0.14	8.57
1.50	0.41	0.31	25.28
2.00	0.55	0.55	54.44
2.50	0.69	0.86	98.71

Figure 7: Generated FTABLE for Natural Channel with Flood Plain and without using control structure/s

Using a control structure:

To generate FTABLE for a channel with a control structure, select a control structure/s by checking the box next to the desired device. In the current example Triangular V-Notch weir is used. Enter or accept required information for the control structure such as discharge coefficient, etc [Figure 8].

Click on the **Calculate FTable** button to generate an FTABLE with the control structure, which can be viewed in the Results tab of the Results Table [Figure 9].

**CONTROL STRUCTURES (optional)**

Triangular V-notch Weir

/notch Weir Vertex Angle (deg)

/notch Weir Invert

Discharge Coefficient

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Trapezoidal Weir (Cipoletti)

Trapezoidal Weir Width

Trapezoidal Weir Invert Depth

Discharge Coefficient

---

Broad Crested Weir

Broad Crested Weir Crest Width

Broad Crested Weir Invert Depth

Discharge Coefficient

---

Rectangular Weir

Figure 8: Selection of control Structures

Results Copy Results

Right click the grid for more options.

depth(ft)	area(acres)	volume(ac-ft)	v_notchwr (cfs)
0.00	0.00	0.00	0.0
0.50	0.14	0.03	0.0
1.00	0.28	0.14	0.0
1.50	0.41	0.31	0.0
2.00	0.55	0.55	0.0
2.50	0.69	0.86	0.0

Figure 9: Generation of FTABLE for Natural channel with flood plain and a control structure

**Step 7:** The user can export the generated FTABLE by right clicking on the table and selecting the required option – “Copy to spreadsheet or Copy to UCI File” [Figure 10].

If “Copy to Spreadsheet” option is selected, tab delimited FTABLE data is displayed in the **Copy Results tab** [Figure 11].

Results Copy Results

Right click the grid for more options.

depth(ft)	area(acres)	volume(ac-ft)	v_notchwr (cfs)
0.00	0.00	0.00	0.0
0.50	0.14	0.03	0.0
1.00	0.28	0.14	0.0
1.50	0.41	0.31	0.0
2.00	0.55	0.55	0.0
2.50	0.69	0.86	0.0

Copy To SpreadSheet  
Copy To UCI File  
Clear FTable

Figure 10: Exporting options for the generated FTABLE

Select the contents of the text area below and press Ctrl+C to copy.

0.0	0.0	0.0	0.0
0.5	0.14	0.03	0.0
1.0	0.28	0.14	0.0
1.5	0.41	0.31	0.0
2.0	0.55	0.55	0.0
2.5	0.69	0.86	0.0
3.0	0.83	1.24	0.0
3.5	0.96	1.69	0.0

Figure 11: Exporting FTABLE to spreadsheet

If the data must be exported to a UCI File, select **Copy to UCI File** option. The data is formatted and displayed in the **Copy Results tab** [Figure 12].

Select the contents of the text area below and press Ctrl+C to copy.

```

*** ***
FTABLE  _ID***
rows cols      ***
13  4
depth  area  volumev_notchwr ***
0.00  0.00  0.00  0.00
0.5   0.14  0.03  0.00
1     0.28  0.14  0.00

```

Figure 12: Exporting FTABLE to an UCI File

To export/copy the FTABLE from **Copy Results tab**, select the entire generated FTABLE and then press Ctrl+C.

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