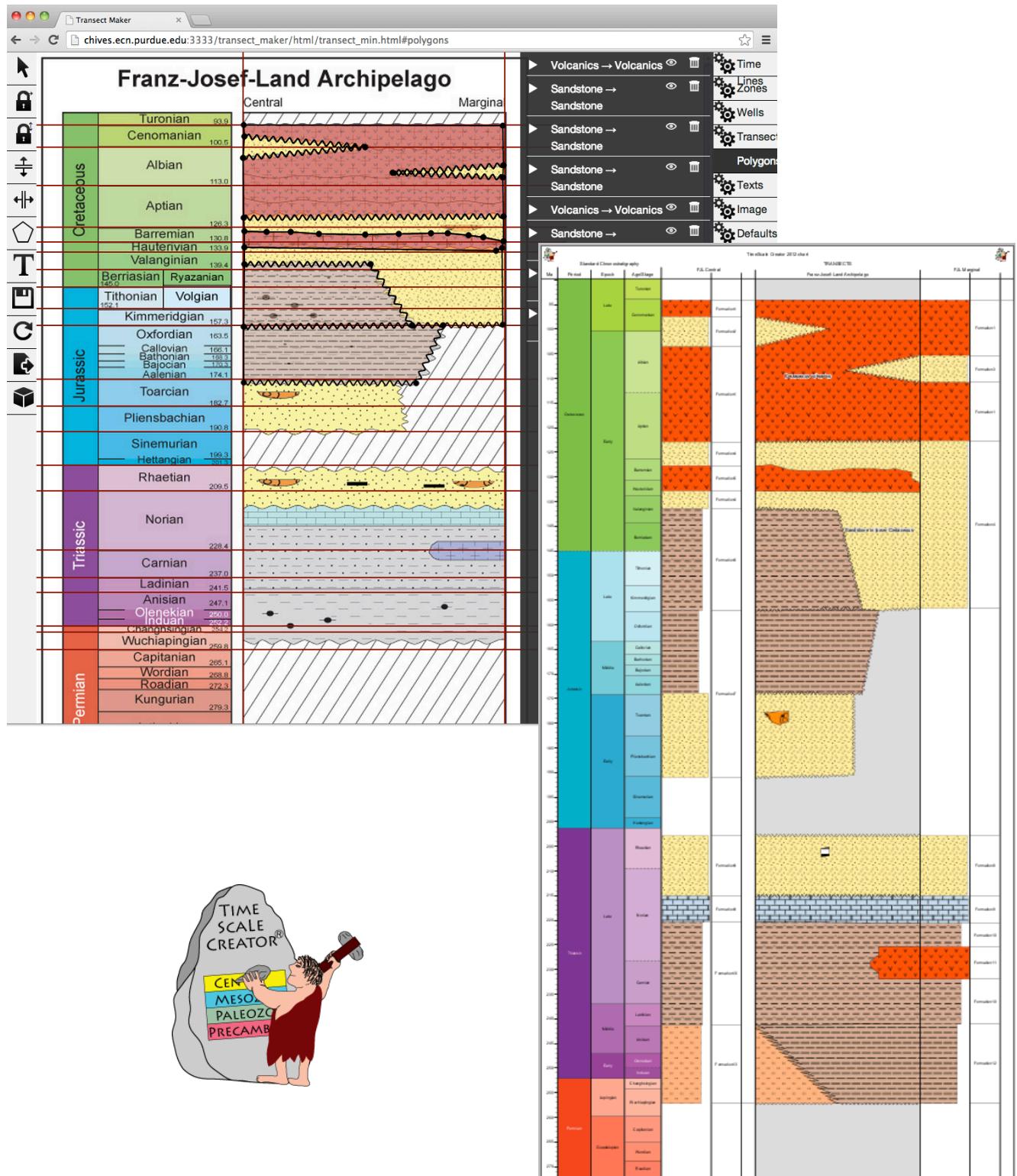


Transect Maker for TimeScale Creator

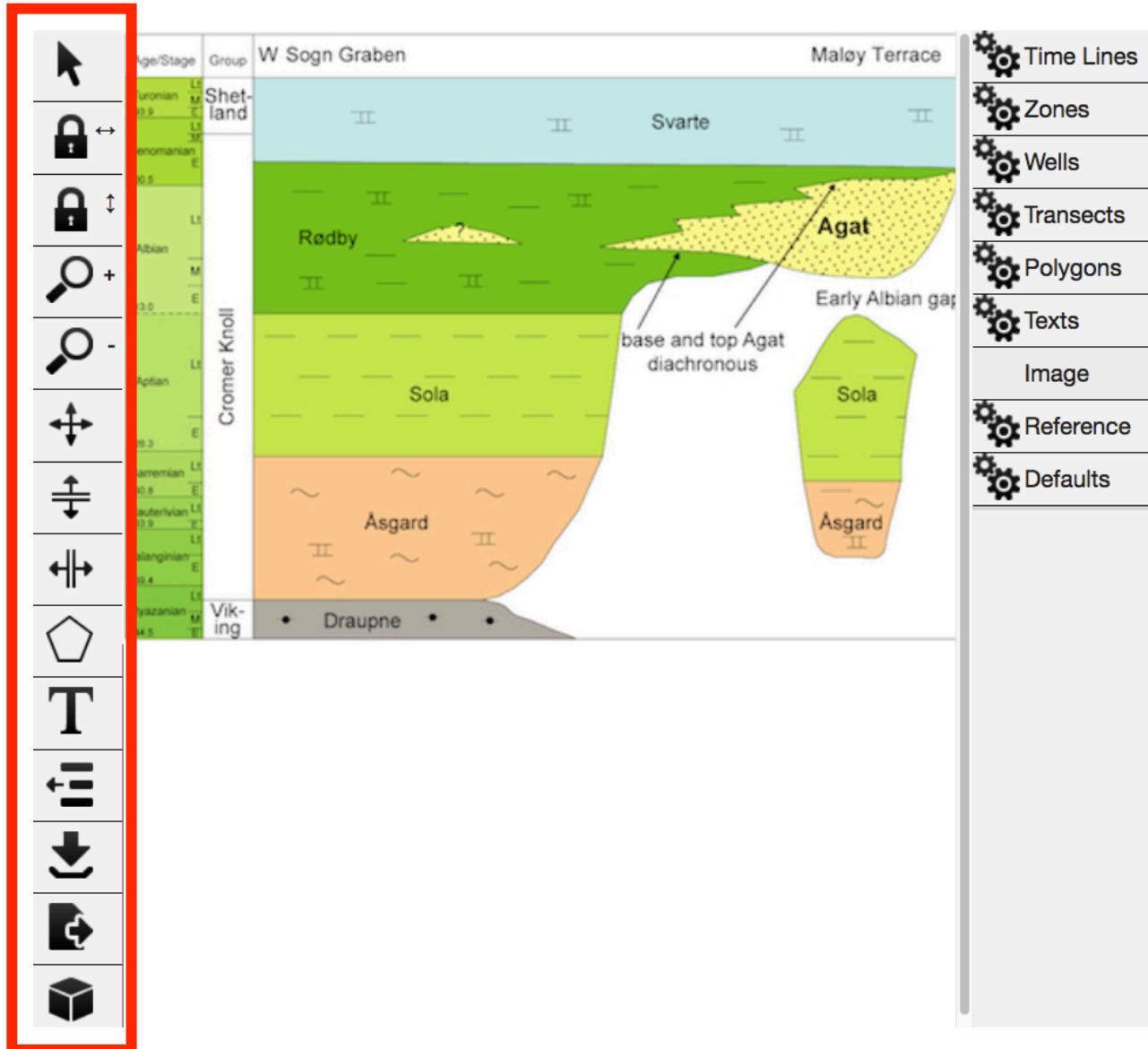
Nag Varun Chunduru

October 2017



Transect Maker Overview

Tools (left side of opening window)





Pointer Tool - Doesn't really do anything. Clicking the pointer tool will unselect any of the other tools that are active.



Lock in X Direction - Selecting this will lock the mouse to move only in horizontal direction. The y position is chosen based on the last point added to the polygon so that the next point will be straight across the previous point or the current point that is being



dragged. This will help in drawing straight horizontal lines. Key Shortcut



Lock in Y Direction - Selecting this will lock the mouse to move only in vertical direction. The x position is chosen based on the last point of the polygon or the current point that is being dragged. This will help in drawing straight vertical lines. Key



Shortcut



Zoom in - Click on the magnifying glass as often as you need to zoom in.



Zoom out - Click on the magnifying glass as often as you need to zoom out.



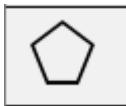
Panning – Click the panning option to move your image up or down or left and right. To leave the panning option click the pointer tool.



Add Timeline - After selecting this whenever the user **double clicks** on the canvas a timeline will be added.



Add Well - Similar to the timeline. After selecting this whenever the user **double clicks** on the canvas a well will be dropped.



Polygon Tool - Selecting this will enable polygon mode. Icon changes to . After the plus icons shows up clicking on the icon will start a new polygon. Double clicking on the canvas will add new points to the polygon and the user can generate his desired shape.



Text Tool - Selecting this tool will start a text mode. When the canvas is double clicked the text box appears with an identifier. To change the text, go to **Texts** on the right hand panel, open the appropriate text window and type the desired name.

Before adding text boxes save your project. Delete all previously saved versions from the sandbox. If not, program can get unresponsive and you will lose your work.



Reference Column – Select this icon to see the reference column displayed. Click the icon again and the column disappears. This reference column only corresponds to the selected stages if you do not pan or zoom. Once you have used the zoom it will no longer display correctly.



Zip Download – This allows you to download a zipped file which includes the json and txt file. You can load the zip file directly into TSCreator and it will display correctly.



Export - Clicking Export will open a new view that will display the output of the transect maker in TimeScale Creator format.



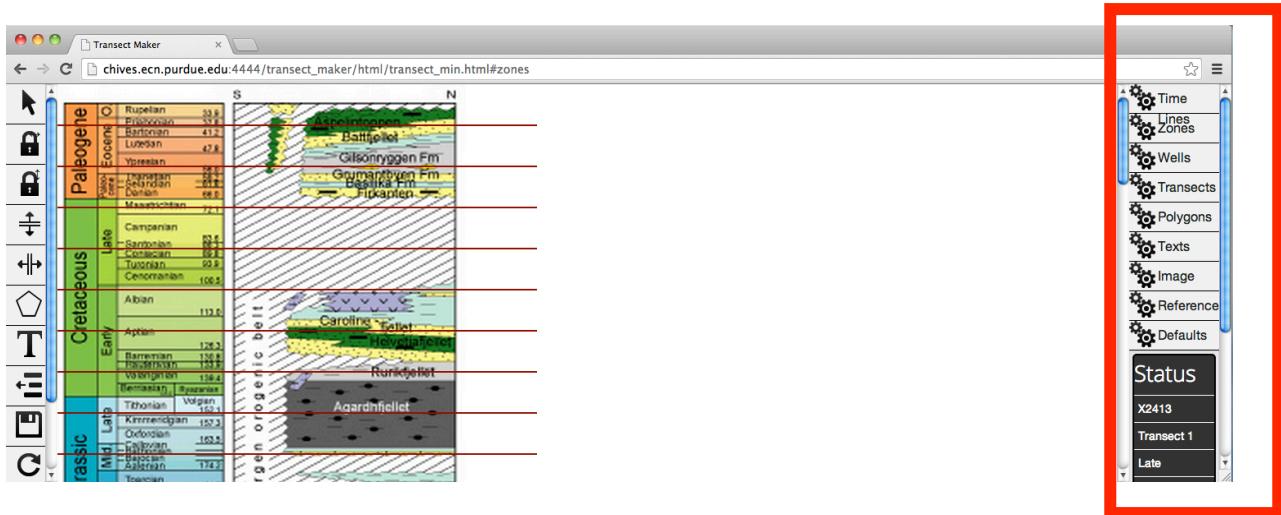
A tabular view is for the user to quickly verify the changes and the text view is for the user to quickly copy the output and paste it in a text file on his machine. A map view gives you latitude and longitude for your wells already formatted for making a mappack.



Sandbox - This application creates a sandboxed HTML5 file system on the client's machine. Selecting this will open the view displaying directories in the user's file system. User can save the current project or load any of the previous projects quickly into the maker as the files are stored permanently. The files can also be downloaded to the user's machine.

However, it is recommended that you download to your computer all the files you want to keep, once you have finished a project. Then clear out all your saved files from the sandbox, otherwise the Transect maker might become unresponsive during a future project.

Input Panel (right side of opening window)



Time Lines Add ages and label timelines. Hit return after the entries to record your changes.

Zones Add zone descriptions

Wells Add well name, latitude, longitudes

Transects Add transect name and detailed description

Polygons Add polygon name and description. Click on:
Lines: add lapping or wavy lines.
Points: Points can be adjusted by changing the percentage from base of adjacent timeline.
Pattern: Choose lithology pattern. List of available patterns is on next page.

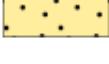
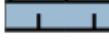
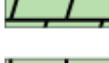
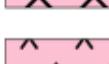
Texts Add text to previously chosen text boxes. Choose font, size and color.

Image Drag and drop your image. Adjust size.

Reference Choose reference time frame and what columns to use (periods, epochs, stages). You can also add a new previously generated reference column.

Available Lithostratigraphic Patterns

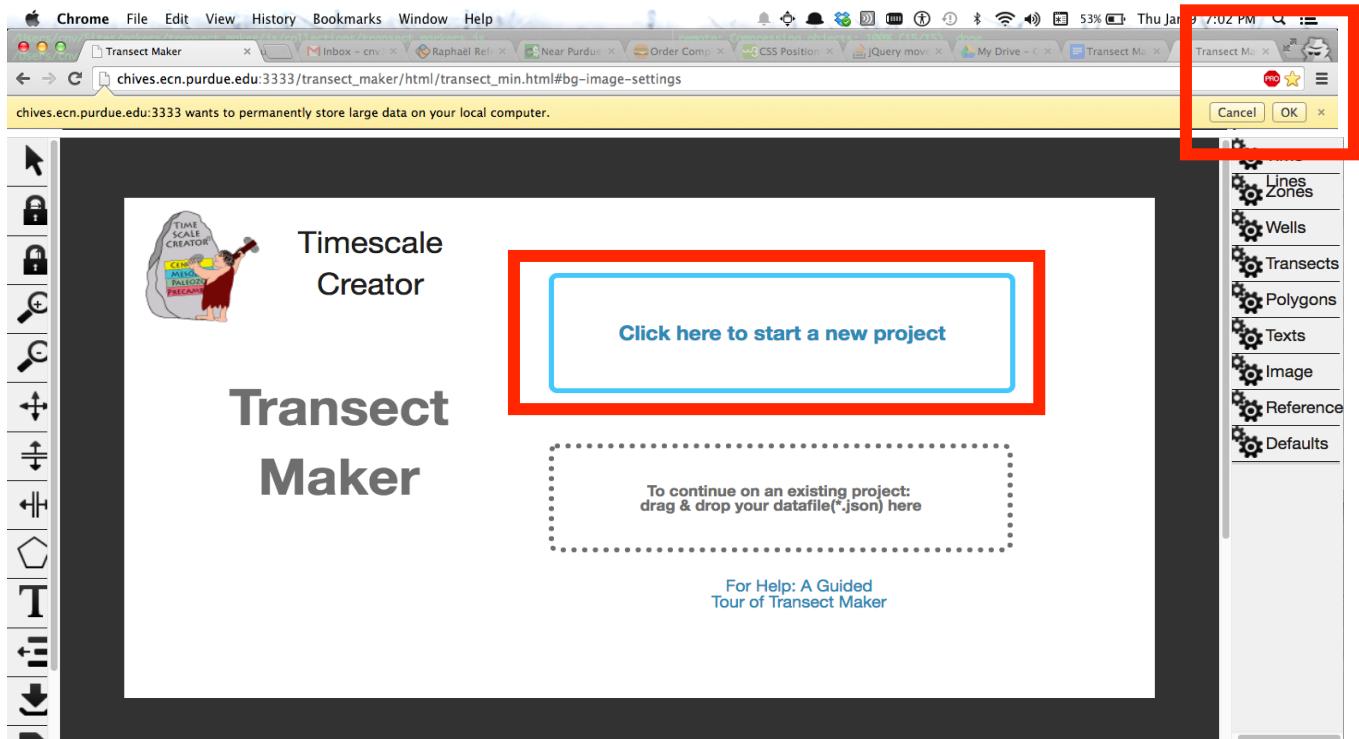
TS-Creator Lithostratigraphic Patterns

	Glacial till		Pelagic marl		Evaporite
	Conglomerate		Limestone		Gypsiferous claystone
	Coarse clastics		Oolitic limestone		Lacustrine
	Coarse-grained sandstone		Reef limestone		Brackish
	Sandstone		Siliceous limestone		Saline
	Fine-grained sandstone		Chalk		Basement
	Clayey sandstone		Siliceous chalk		Granitic
	Siltstone		Chert		Gneiss
	Claystone		Shallow-marine carbonate		Metavolcanics
	Sandy_claystone		Pelagic biogenic		Volcanics
	Continental marl		Dolomite		Volcanic_ash
	Continental to marine fine-grained clastics		Dolomitic limestone		Lava
	Mixed marine		Soil		Banded Iron
	Sandy limestone		Coal		No Data
	Clayey limestone		Halite		Unknown
	Shallow-marine marl		Gypsum-Anhydrite		Gap

Getting Started... A Step by Step Guide

Browser Requirements : Google Chrome

Step 1 - On opening the URL the app will ask for your permission to create a space (sandbox) on your system. By accepting it, you will have the ability to store projects in this sandbox and load them when required.



Step 2 - To start a new project just click “start new project” and an empty page will appear.

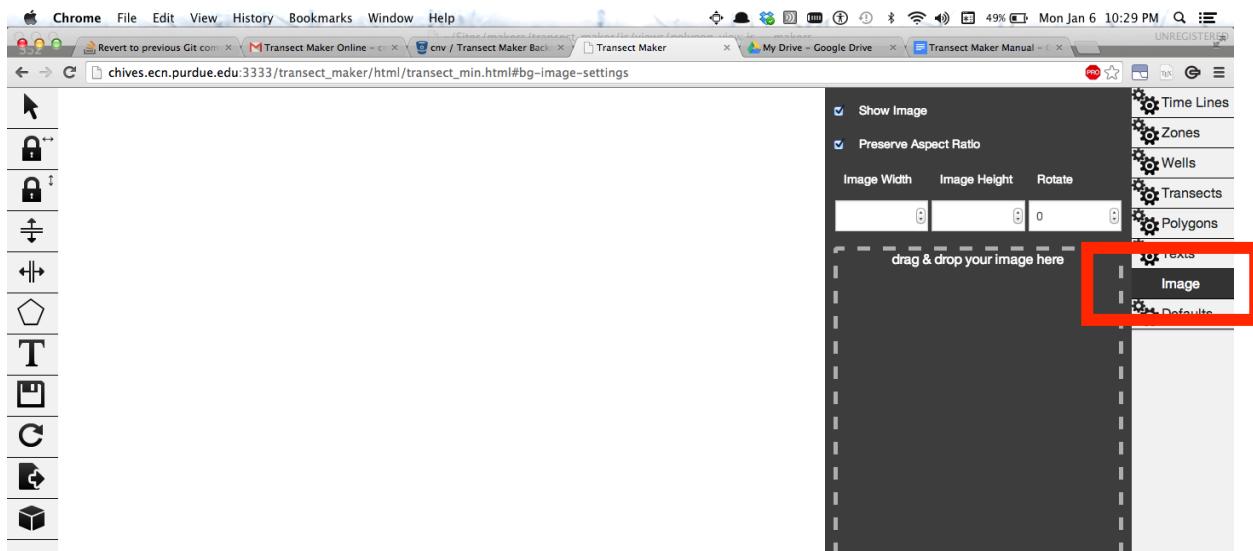
Hint: If you have already a **json** file from a previous project you can just drag it into the “drag and drop” box. It will automatically load.

If you have a saved project in your sandbox, then just click the sandbox icon and load the **json** file from there.

Start new project

Click “start new project” on the intro view. This will take you to an empty page.

Add an image by selecting the **Image** Tab on the right hand setting panel and then drag and drop an image. Image can be of any format (**png/gif/jpeg**) except pdf. You can resize the image or rotate it according to your needs.



Resize your image before you put in timelines and wells.

Later resizing does not keep the timelines in the same place.



To move your image use the panning tool . Click on the panning tool, a crosshair appears and you can move your image around.



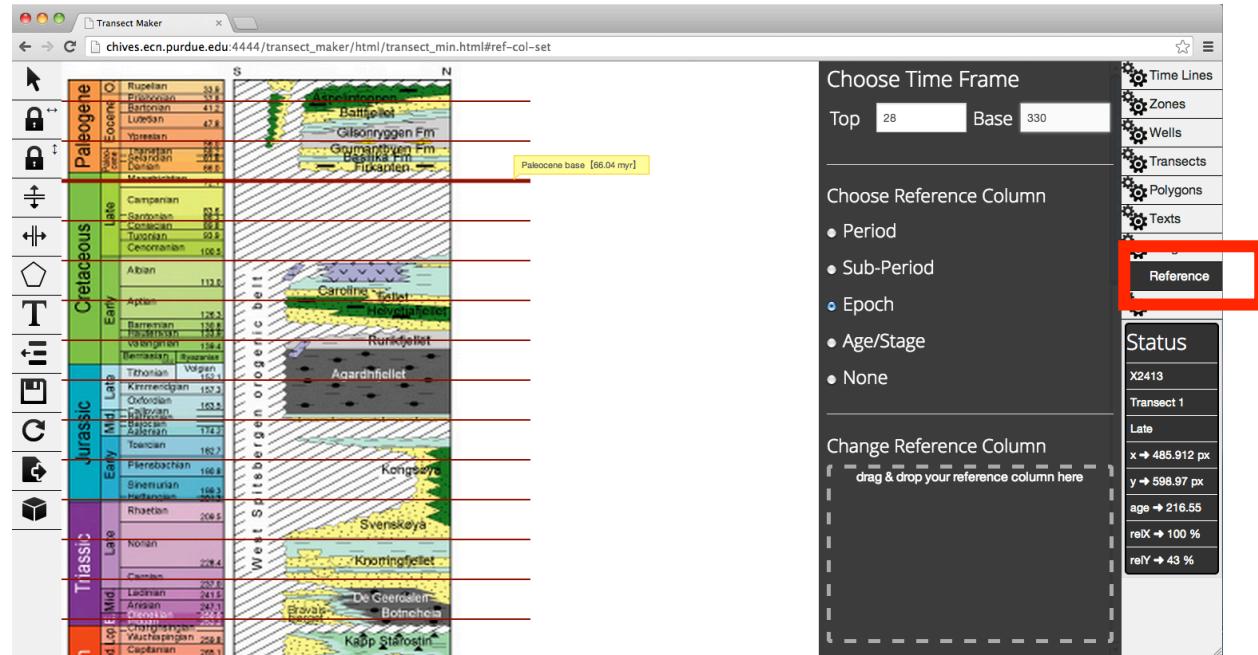
To exit the panning mode click on the pointer tool .

Adding or Editing information to transect elements (Timelines / Zones / Wells / Transects / Polygons / Texts)

Before starting to draw polygons you have to create **timelines** and **wells**. Each of the properties of the transect elements can be edited in right hand sided settings list. Start editing the field by clicking on the corresponding name. In order to close the input fields after the information is updated - **press enter or esc key**. This will update the info to the appropriate element. To close the Tabs completely just click it again.

Add Timelines from the reference Time Scale (GTS2016):

Open **Reference** Tab on right hand side. This gives you a window where you can choose your time frame and what columns to use (periods, epochs, stages). You can also add a new previously generated reference column.



Once you hit **return** on the age selection, the timelines will appear evenly spaced on the screen. You can now drag them to the appropriate location (the timelines are labeled). When you have lots of timelines, they will be off the screen. Use the **panning** tool to move down or up and you will find them.

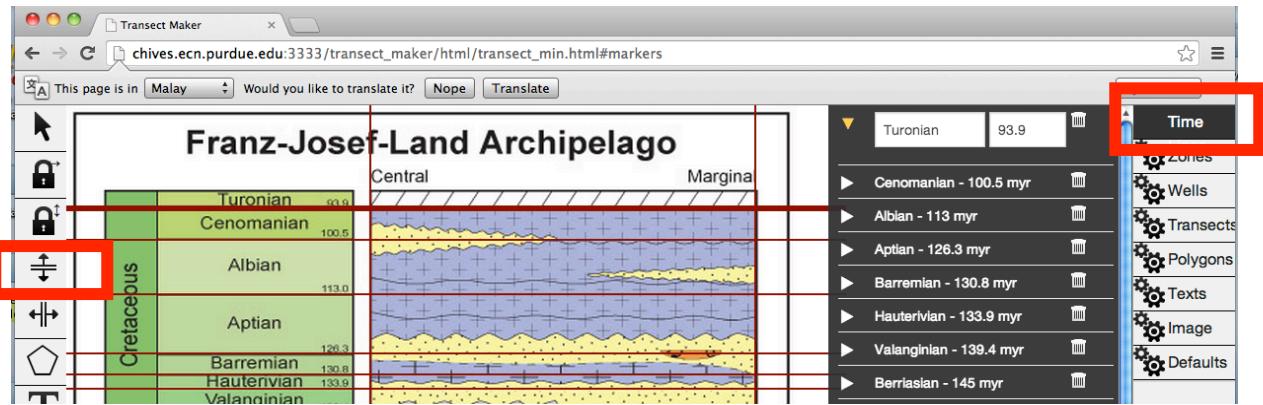
Hint: For large images zoom out to make it easier to position the time lines.

If you select your timelines from the Reference Time Scale, then the Zone descriptions are already filled in. However, you can still edit or delete them under the **Zones** tab.

Add Timelines:

Open **Time** Tab on right hand side, this will give you the window where you add information for your timelines.

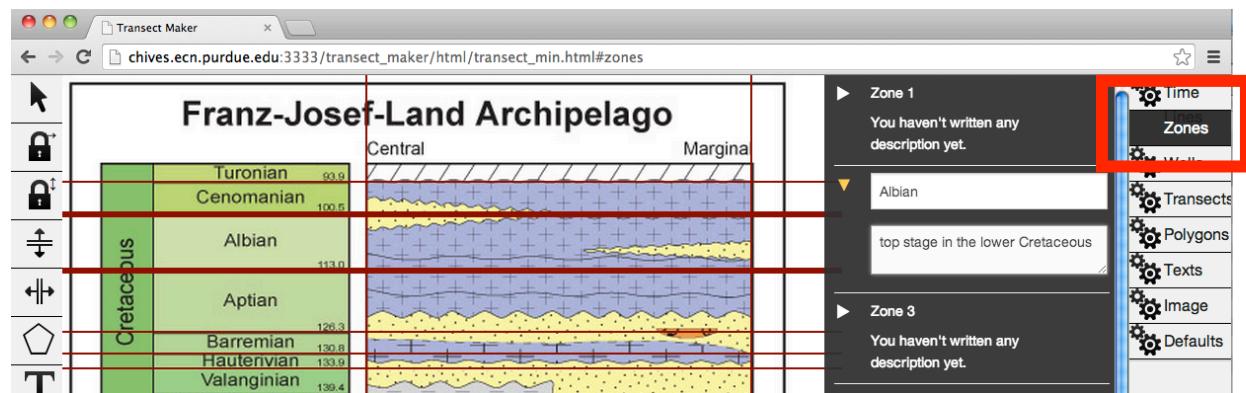
If you selected your timelines from the Reference Time Scale, then the appropriate names and ages for your timelines are already displayed. You can now add or delete other timelines or change the ages.



To add new timelines click **timeline** button on left tool bar  and double-click a zone or stage on your image which you want to use as a timeline. On the right a new timeline is added, you can change the name and add the age in myr. Hit **enter** after each entry. Continue until all your timelines are done.

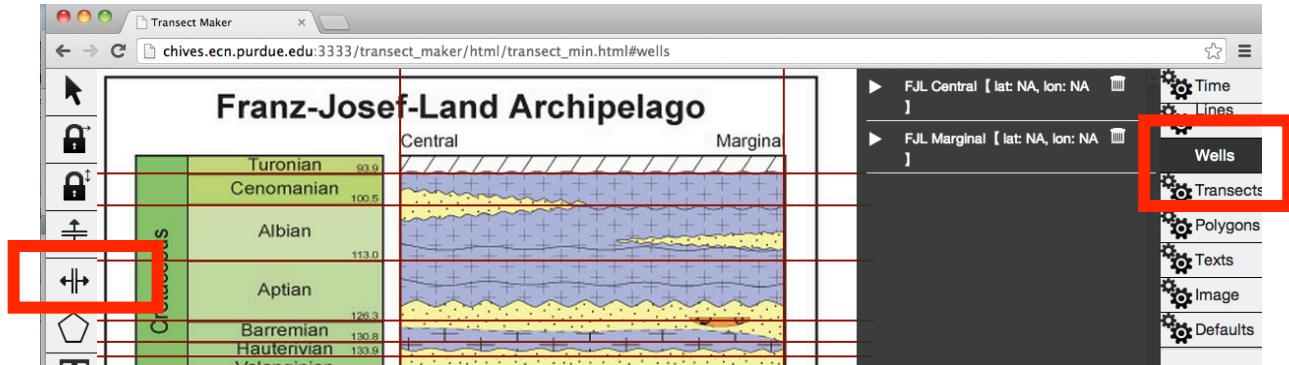
Add Zones:

Open **Zones** Tab on right hand side, this will give you the window where you add information for your zones, which is the interval between two of your timelines. If you hover the cursor over the zone, the corresponding two timelines will appear bold. Type in zone name and **hit return** (important, otherwise the name will not record)



Add Wells:

Open **Wells** Tab on right hand side, this will give you the window where you add information for your wells (name and latitude and longitude).



Next click **well** button  and double-click where you want a new well. You need at least 2 wells to make a transect.

If you add latitude and longitude coordinates they will be saved in the correct format to be used for producing map packs.

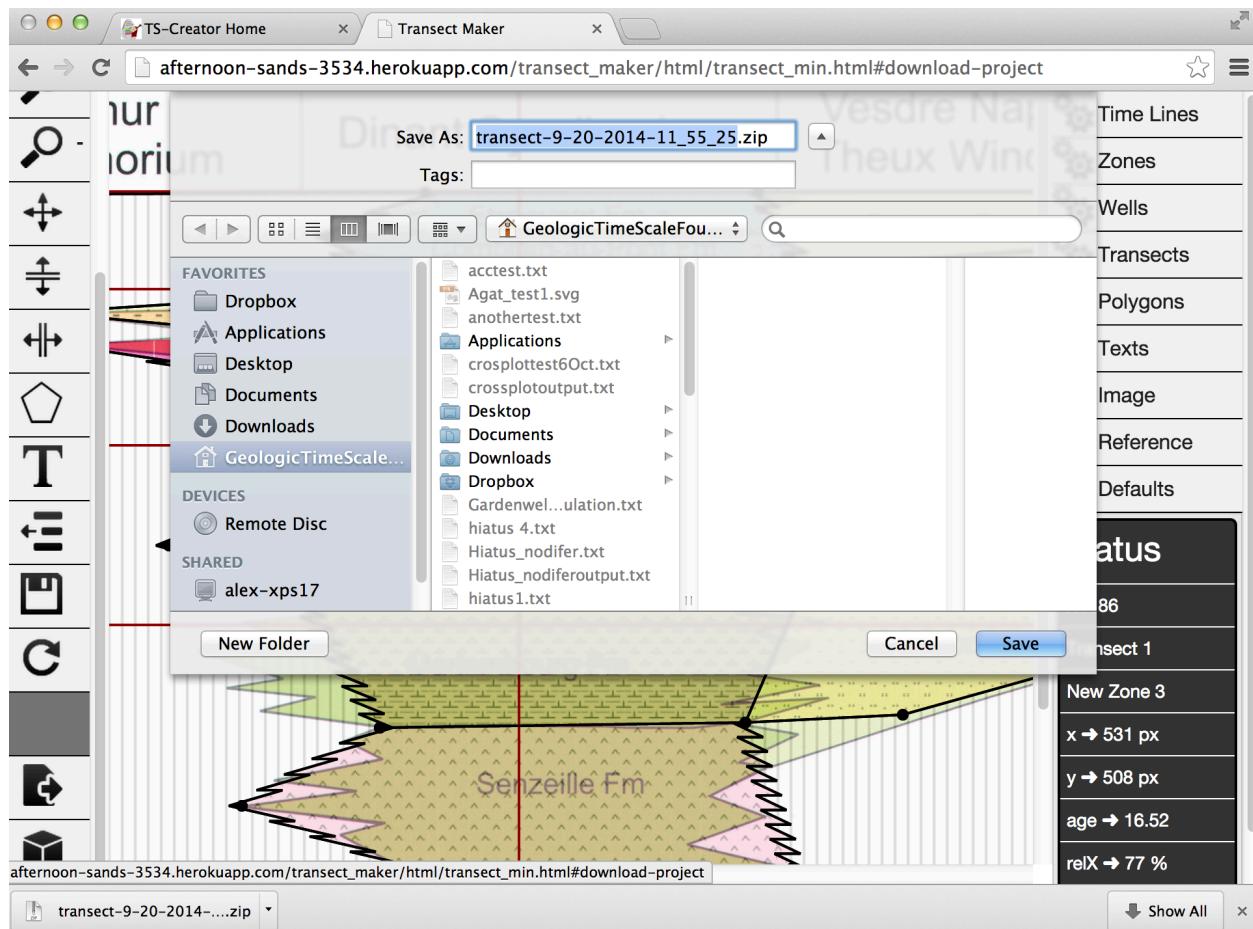
Save one copy, so you don't have to redo the timelines and wells, if you mess up the polygons.

Saving your file:

Save a zip file



Click **download project as zip** and depending on your Chrome settings a window will open and ask you for a file name, or directly save the zip to your computer. The zip file contains the json and the txt files. You can load the zip file directly into TS-Creator and it will load correctly.



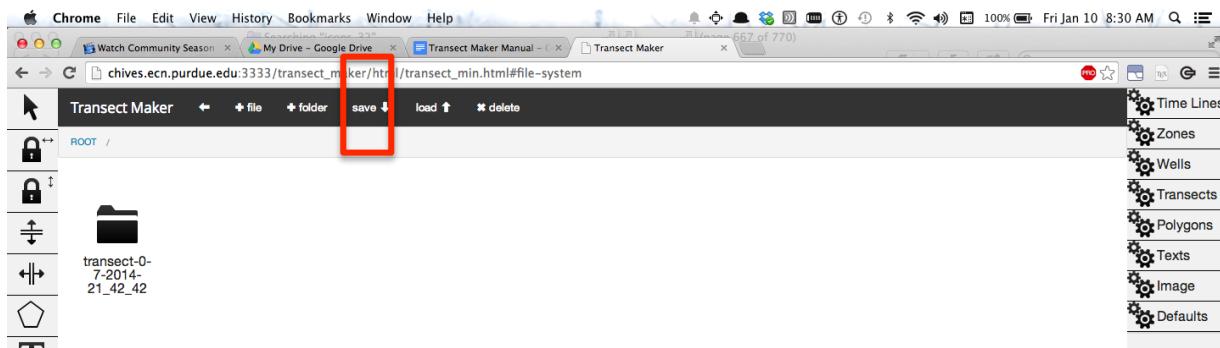
How to save to the Sandbox:

Sandbox

This application creates a sandbox file system on your system to store data permanently. Clicking **download project as zip** will also automatically create a saved copy in your sandbox.

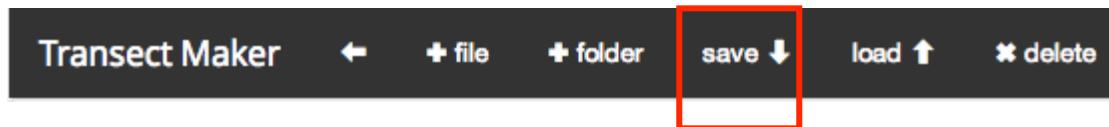
To reload a project from the sandbox click on . This will open up your sandbox and display any directories or files previously saved or created.

Sandbox View



You can also save a project from the sandbox by simply clicking on “**save**” in the menu bar. This will create a new directory called “transect” attached with the time stamp.

Sandbox Menubar

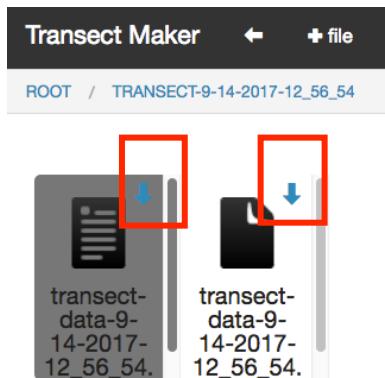


You can rename the directory by simply clicking on the text and edit it.



You can also navigate the directory by double clicking on it. This opens the folder to show 2 files called transect.txt and transect.json. You should rename them.

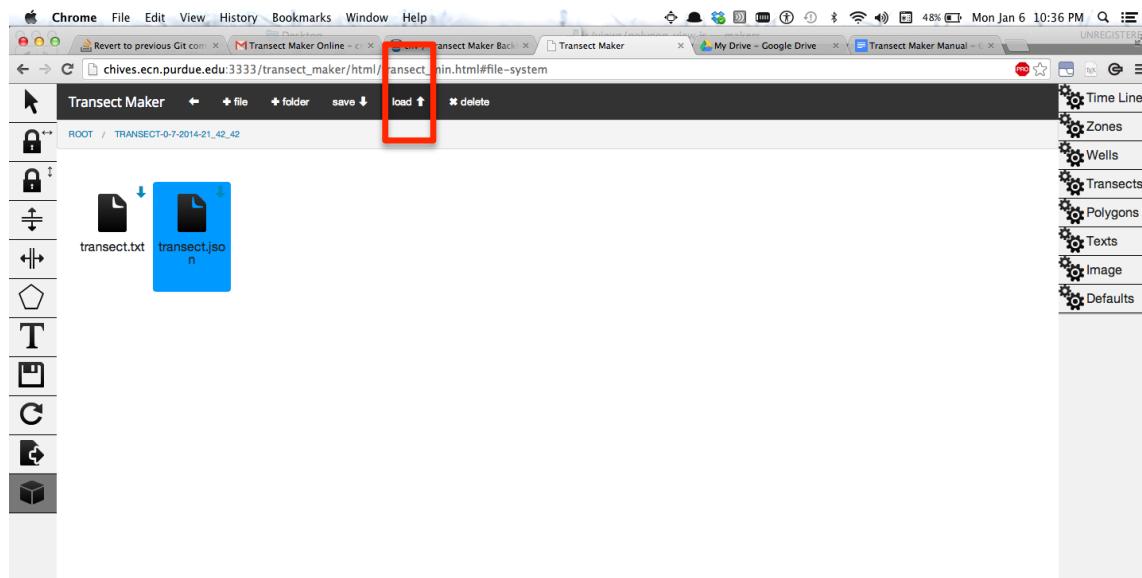
You can download the generated files by clicking on the "Arrow" on the right top corner of the file.



You can go back to the parent directory by clicking “**Root**” in the menu bar.

To delete a directory or a file - Select the directory/ file by clicking on it and click “**delete**” in the menu bar.

You can load the data from saved projects, by first selecting the correct folder and then loading the appropriate json file. Single click on the file selects it, then click “**load**”.



Important!!!!

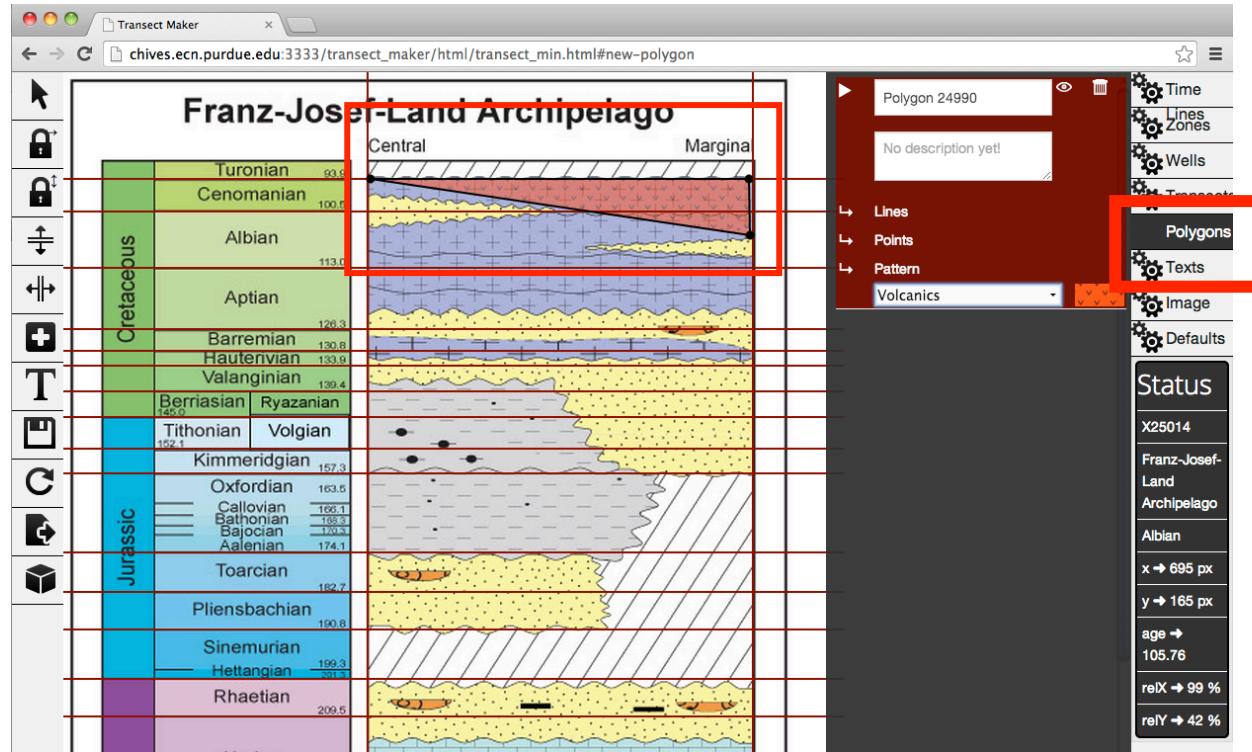
Even if you only use the "download project as zip" method to save your files, you must go to the sandbox from time to time and delete all the accumulated files, otherwise the program will just stop at some point and not save anymore.

It is best to make sure that the Sandbox is empty, before starting a new project.

There is only one sandbox on your computer, therefore all the files you save from the Transect Maker and Lithology Maker will be saved in the same place.

How to draw Polygons:

Open **Polygon** Tab on right hand side, this will give you the window where you add information and patterns for your polygons.



Draw Polygon:

Click **polygon** icon  , when it changes to  , start your first polygon by double-clicking for the first point. Select further points by double-clicking each point. The polygon will close itself, therefore you don't have to draw the last segment.

Hint: You can not put the points directly onto the well lines, therefore choose your points slightly inside the transect. Once your polygon is finished, you can pull the points to the outside of the transect and let go of the mouse and then they snap all back to the well lines. This assures straight borders for your transect.

For straight lines you can use the horizontal  and vertical locks .

Lock in X Direction - Selecting this will lock the mouse to move only in horizontal direction. The y position is chosen based on the last point added to the polygon so that the next point will be straight across the previous point or the current point that is being dragged. This will help in drawing straight horizontal lines.

Lock in Y Direction - Selecting this will lock the mouse to move only in vertical direction. The x position is chosen based on the last point of the polygon or the current point that is being dragged. This will help in drawing straight down.

Drawing a second Polygon:

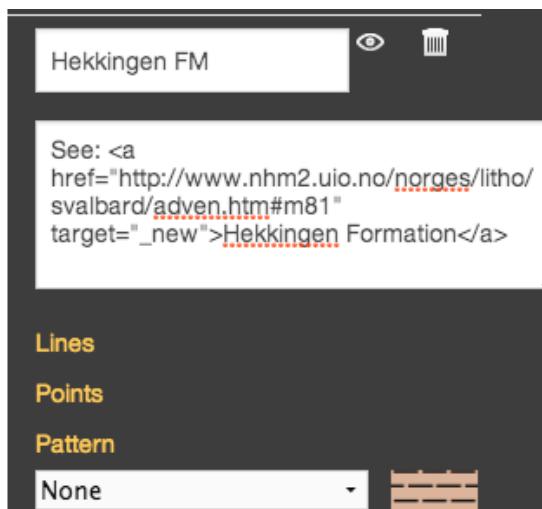


Click on the sign again to start the new polygon.

If your second polygon uses some of the same lines as the first, then a red dot will appear and you click only once instead of the double-click. You do that for all the dots, which are used by both polygons. All individual dots need to be double-clicked to be added.

You can add a name in the polygon window and add a description for each polygon. In the description window you can also add links to other websites. The format is:

`website name`

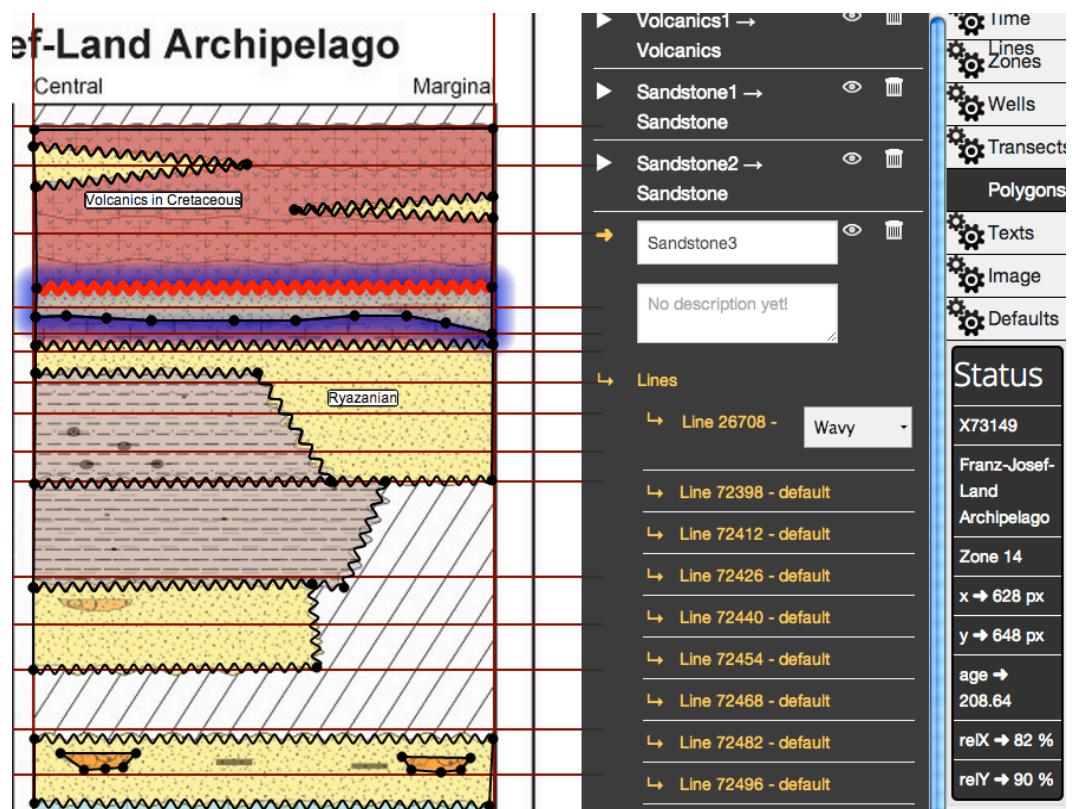
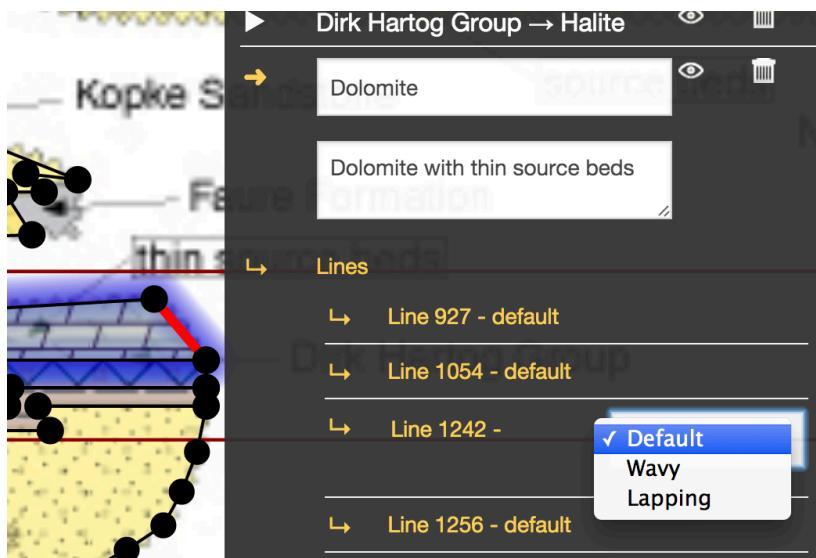


You have to choose a pattern.

Click on **Points** and you can adjust their position by changing the percentage relative to the base of the adjacent timeline.

Click on **Lines** and you can change the line style for each line between straight (default), wavy and lapping. If a line is used by more than one polygon, then you only need to change the line style in one polygon, the other one adjusts automatically.

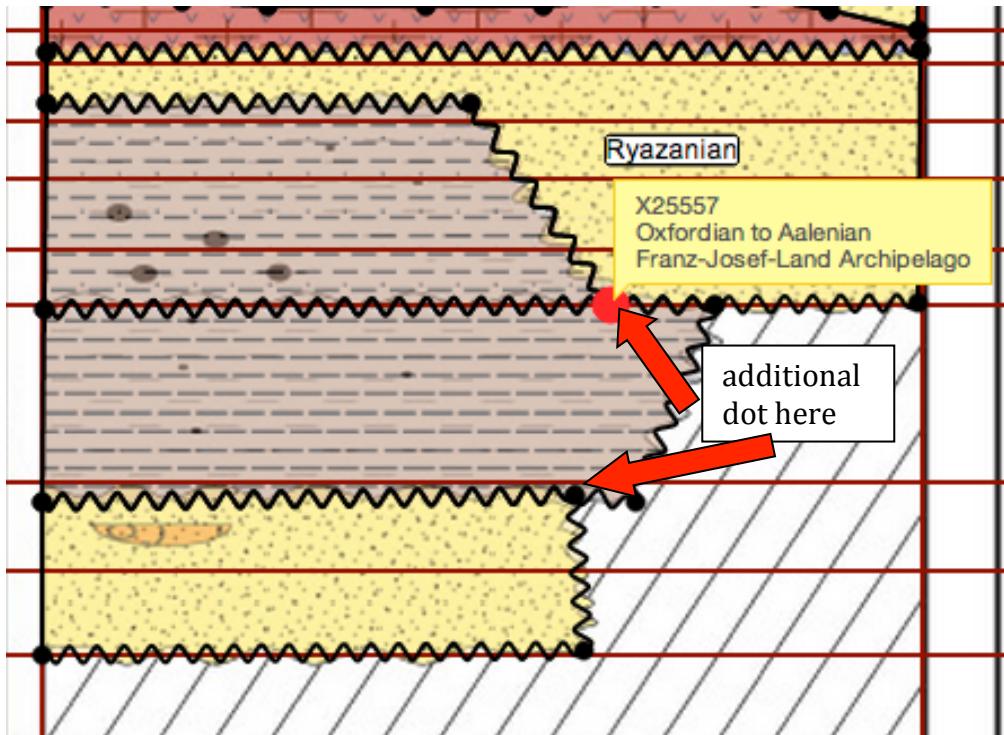
Hint: Finish all the polygons which share a border before changing the lines to wavy or lapping. That makes it much easier to see the shared dots while drawing.



To minimize the Lines folder just click on the word **Lines**. To minimize the whole polygon entry click on the orange arrow next to the polygon name

Special case: Triple junction

The line at the base of the Ryazanian Sandstone cannot be drawn as one line, because it is partly used by the top line of the underlying claystone. Therefore, each segment needs to have a point selected, otherwise the lines won't work

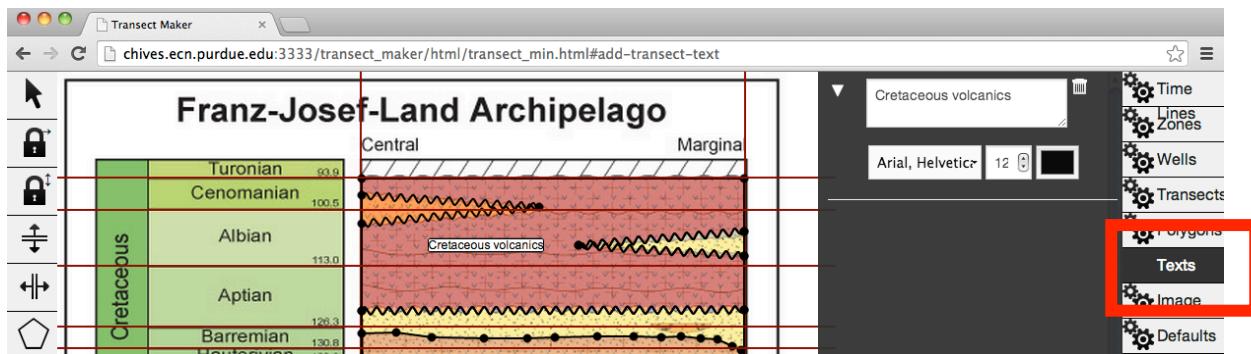


Bad News: If you forget to put a dot on a triple junction, you have to delete your polygon and redo it. It will not show up correctly on your chart otherwise.

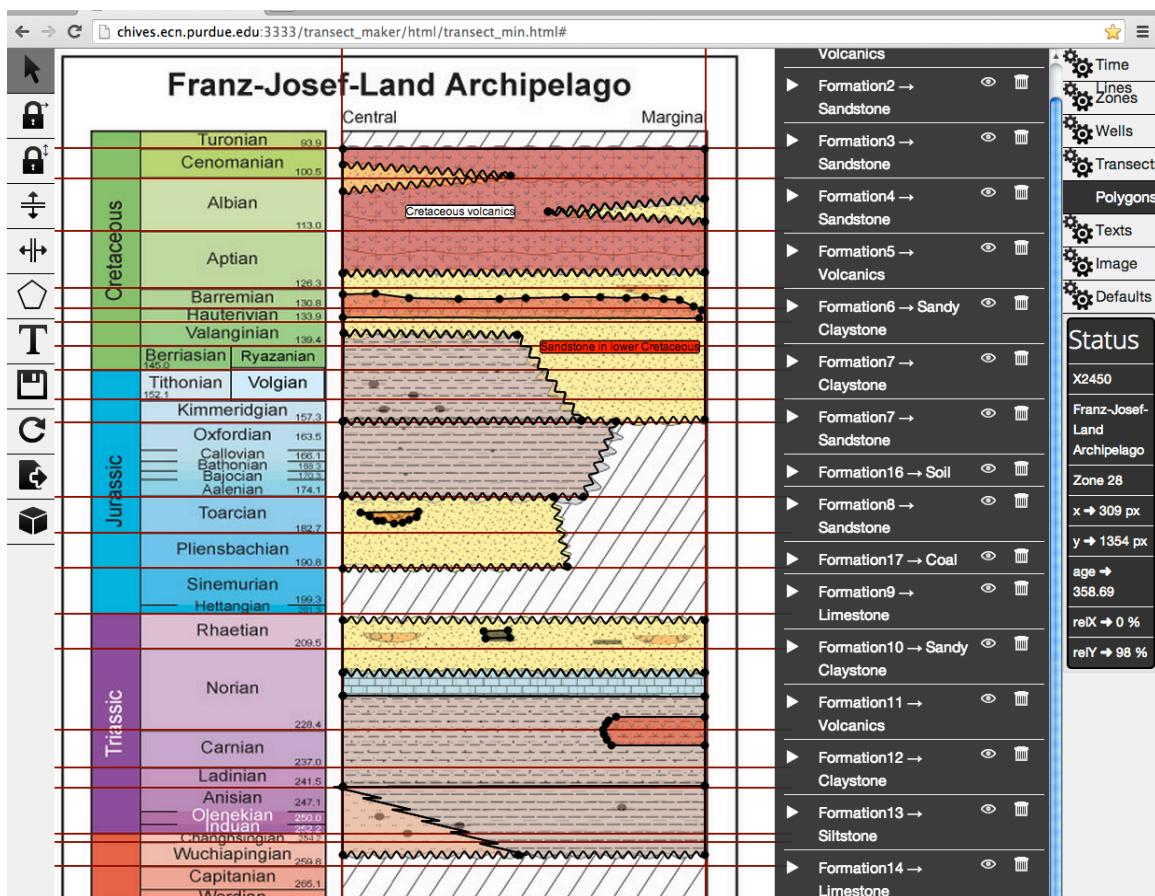
Add Text boxes to transect:

Before adding text boxes save your project. Download all previously saved versions and then delete them from the sandbox. If not, program can get unresponsive and you will lose your work.

Click **T** icon, start your text by double-clicking into the polygon, where you want to place the text. Go to the **Text** Tab on the right panel and type the text. You can then move the textbox to its final location in the polygon. Don't put a text box on a time line, it will not display.



Finished transect:



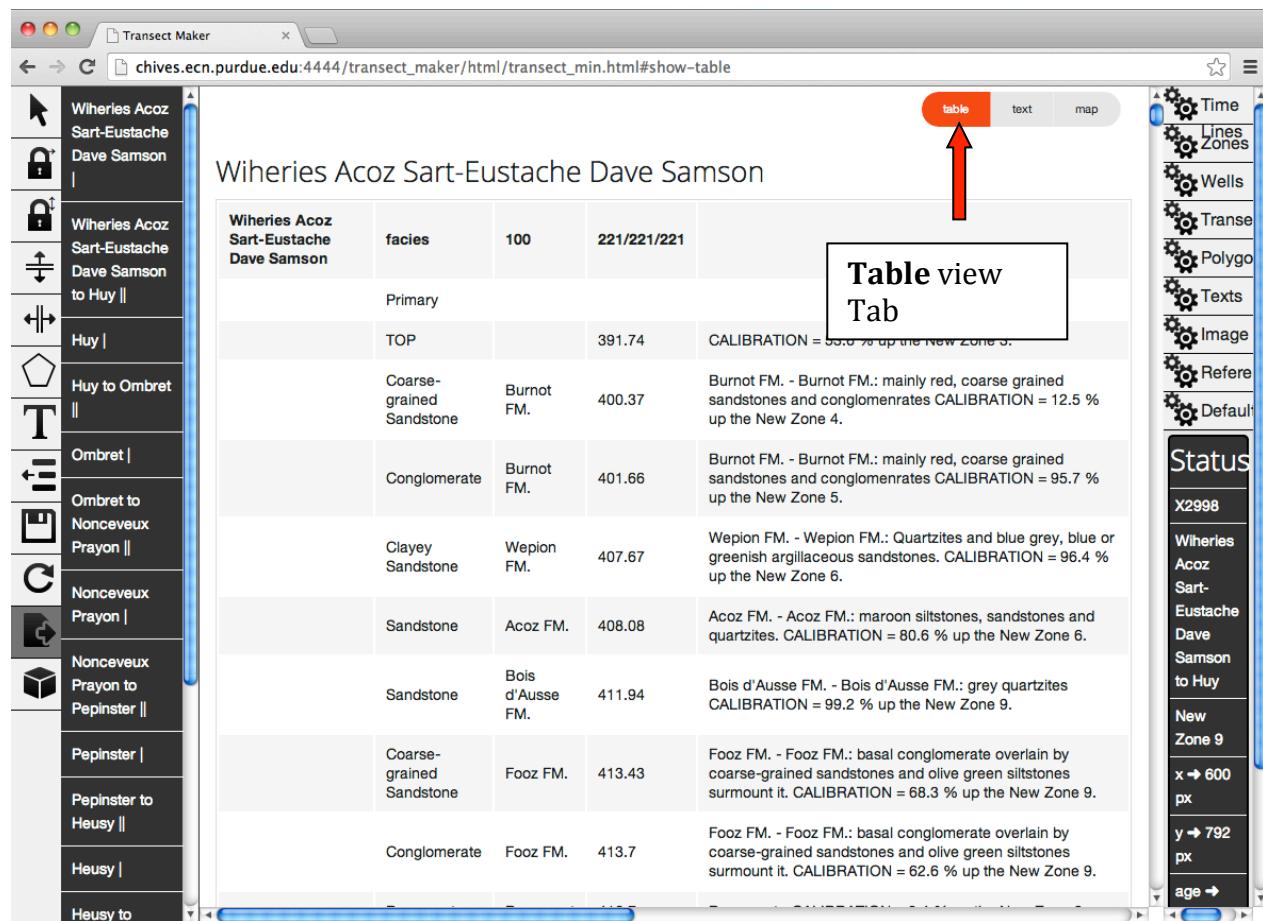
Export Data

You can export the data in Timescale Creator format either by saving the project as zip to your

computer or to the sandbox and downloading the text file or by using **quick export** . The **Export Tab** will open up the view containing the tab-separated Timescale Creator format. You can choose to view the **table** to quickly verify the output and use the **text** view to copy the output into a text editor or Excel. A **map** view gives you latitude and longitude for your wells, already formatted for making a mappack.

Make sure you closed the right hand side tabs by again clicking on the tab, otherwise you won't see the full screen and the button to switch from **table** to **text** to **map** view

You can quickly swipe the whole text view and copy it into a text editor and save as .txt and then load the file into TSCreator.



The screenshot shows the Transect Maker application interface. On the left is a vertical toolbar with various icons and a list of geological units: Wiheries Acoz, Sart-Eustache, Dave Samson, Huy, Huy to Ombré, Ombré, Ombré to Nonceveux, Nonceveux, Nonceveux to Pepinster, Pepinster, Pepinster to Heusy, Heusy, and Heusy to. The main window displays a stratigraphic column for the "Wiheries Acoz Sart-Eustache Dave Samson" section. The "Table view Tab" is highlighted with a red box and arrow. The table has columns for facies, top/bottom markers, age, and description. The descriptions include geological observations like "mainly red, coarse grained sandstones and conglomerates" and "Quartzites and blue grey, blue or greenish argillaceous sandstones". The right side of the interface includes a sidebar with tabs for Time, Lines/Zones, Wells, Transects, Polygons, Texts, Images, References, and Default, and a status bar at the bottom.

facies	top	bottom	age	description
Primary	TOP		391.74	CALIBRATION = 55.6 % up the New Zone 5.
	Coarse-grained Sandstone	Burnot FM.	400.37	Burnot FM. - Burnot FM.: mainly red, coarse grained sandstones and conglomerates CALIBRATION = 12.5 % up the New Zone 4.
	Conglomerate	Burnot FM.	401.66	Burnot FM. - Burnot FM.: mainly red, coarse grained sandstones and conglomerates CALIBRATION = 95.7 % up the New Zone 5.
	Clayey Sandstone	Wepion FM.	407.67	Wepion FM. - Wepion FM.: Quartzites and blue grey, blue or greenish argillaceous sandstones. CALIBRATION = 96.4 % up the New Zone 6.
	Sandstone	Acoz FM.	408.08	Acoz FM. - Acoz FM.: maroon siltstones, sandstones and quartzites. CALIBRATION = 80.6 % up the New Zone 6.
	Sandstone	Bois d'Ausse FM.	411.94	Bois d'Ausse FM. - Bois d'Ausse FM.: grey quartzites CALIBRATION = 99.2 % up the New Zone 9.
	Coarse-grained Sandstone	Fooz FM.	413.43	Fooz FM. - Fooz FM.: basal conglomerate overlain by coarse-grained sandstones and olive green siltstones surmount it. CALIBRATION = 68.3 % up the New Zone 9.
	Conglomerate	Fooz FM.	413.7	Fooz FM. - Fooz FM.: basal conglomerate overlain by coarse-grained sandstones and olive green siltstones surmount it. CALIBRATION = 62.6 % up the New Zone 9.

Transect Maker

chives.ecn.purdue.edu:4444/transect_maker/html/transect_min.html#show=raw

table text map

Wiheries Acoz Sart-Eustache Dave Samson to Huy ||
 Wiheries Acoz Sart-Eustache Dave Samson to Huy ||
 Huy ||
 Huy to Ombrét ||
 Ombrét ||
 Ombrét to Nonceveux Prayon ||
 Nonceveux Prayon ||
 Nonceveux Prayon to Pepinster ||
 Pepinster ||
 Pepinster to Heusy ||
 Heusy ||

TRANSECTS : Wiheries Acoz Sart-Eustache Dave Samson to Huy Huy to
 Ombrét Ombrét Ombrét to Nonceveux Prayon Nonceveux Prayon to Pepinster Pepinster to
 Heusy Heusy Heusy to Jonkeu Jonkeu Jonkeu to Goe Goe Goe to Eupen Eupen

Wiheries Acoz Sart-Eustache Dave Samson facies 100 221/221/221
 TOP 391.74 CALIBRATION = 53.6 % up the New Zone 3.
 Coarse-grained Sandstone Burnot FM. 400.37 Burnot FM. - Burnot FM.: mainly red, coarse grain
 conglomerates CALIBRATION = 12.5 % up the New Zone 4.
 Conglomerate Burnot FM. 401.66 Burnot FM. - Burnot FM.: mainly red, coarse grain
 CALIBRATION = 95.7 % up the New Zone 5.
 Clayey Sandstone Wepion FM. 407.67 Wepion FM. - Wepion FM.: Quartzites and b
 sandstones. CALIBRATION = 98.4 % up the New Zone 6.
 Sandstone Acoz FM. 408.08 Acoz FM. - Acoz FM.: maroon siltstones, sandstones and quartzites. CALIBRATION = 80.6
 % up the New Zone 6.
 Sandstone Bois d'Ausse FM. 411.94 Bois d'Ausse FM. - Bois d'Ausse FM.: grey quartzites CALIBRATION = 99.2 % up
 the New Zone 9.
 Coarse-grained Sandstone Fooz FM. 413.43 Fooz FM. - Fooz FM.: basal conglomerate overlain by coarse-grained
 sandstones and olive green siltstones surmount it. CALIBRATION = 68.3 % up the New Zone 9.
 Conglomerate Fooz FM. 413.7 Fooz FM. - Fooz FM.: basal conglomerate overlain by coarse-grained sandstones and olive
 green siltstones surmount it. CALIBRATION = 62.6 % up the New Zone 9.
 Basement Basement 416.7 Basement - CALIBRATION = 0.4 % up the New Zone 9.

	0	0.3	22.1	26.4	37	40.6	65	79.5	84.2	84.8	85.1	85.5	86.8	87.1	88.4	89.1	90.8	92.1	98	99	100	101	
	391.74	X16637																					
	393.15																						X16635
	400.37		X16639				X16641																X16645
	401.05							X16643															
	401.66	X16759																					
	402.2																						
	407.67	X16847																					
	407.76																						X16853
	407.78			X16849				X16851															
	408.08		X16943						X16945														
	408.22									X17221													
	408.4										X16947												
	408.49											X16949											
	408.6												X17219										
	408.79													X17217									

Text view Tab

Time Lines Zones Wells Transe Polygo Texts Image Refere Default Status X2998 Wiheries Acoz Sart-Eustache Dave Samson to Huy New Zone 9 x → 600 px y → 792 px age → 414

Transect Maker

chives.ecn.purdue.edu:4444/transect_maker/html/transect_min.html#show=map-data

table text map

Wiheries Acoz Sart-Eustache Dave Samson to Huy ||
 Wiheries Acoz Sart-Eustache Dave Samson to Huy ||
 Huy ||
 Huy to Ombrét ||
 Ombrét ||
 Ombrét to Nonceveux Prayon ||
 Nonceveux Prayon ||
 Nonceveux Prayon to Pepinster ||
 Pepinster ||
 Pepinster to Heusy ||
 Heusy ||
 Heusy to Jonkeu ||

COMMENT DATA COLUMNS

HEADER-DATACOLNAME LAT LON NOTE

DATACOL	Wiheries Acoz Sart-Eustache Dave Samson	50.38	3.75
DATACOL	Huy	50.51	5.23
DATACOL	Ombrét	50.54	5.33
DATACOL	Nonceveux Prayon	50.46	5.73
DATACOL	Pepinster	50.56	5.8
DATACOL	Heusy	50.57	5.86
DATACOL	Jonkeu	50.59	5.92
DATACOL	Goe	50.6	5.95
DATACOL	Eupen	50.62	6.03

COMMENT INFO POINTS

HEADER-INFORMATIONPOINTS NAME LAT LON NOTE

INFOPT	Wiheries Acoz Sart-Eustache Dave Samson	50.38	3.75
INFOPT	Huy	50.51	5.23
INFOPT	Ombrét	50.54	5.33
INFOPT	Nonceveux Prayon	50.46	5.73
INFOPT	Pepinster	50.56	5.8
INFOPT	Heusy	50.57	5.86
INFOPT	Jonkeu	50.59	5.92
INFOPT	Goe	50.6	5.95
INFOPT	Eupen	50.62	6.03

COMMENT TRANSECTS

HEADER-TRANSECTS NAME STARTLOC ENDLOC NOTE

TRANSECT	Wiheries Acoz Sart-Eustache Dave Samson to Huy	Wiheries Acoz Sart-Eustache Dave Samson	Huy
TRANSECT	Huy to Ombrét	Huy	Ombrét
TRANSECT	Ombrét to Nonceveux	Ombrét	Nonceveux
TRANSECT	Nonceveux Prayon	Nonceveux	Prayon
TRANSECT	Pepinster to Heusy	Pepinster	Heusy
TRANSECT	Heusy to Jonkeu	Heusy	Jonkeu
TRANSECT	Jonkeu to Goe	Jonkeu	Goe
TRANSECT	Goe to Eupen	Goe	Eupen

Map view Tab

Time Lines Zones Wells Transe Polygo Texts Image Refere Default Status X2998 Wiheries Acoz Sart-Eustache Dave Samson to Huy New Zone 9 x → 600 px y → 792 px age → 414

Drag & Drop

After you download the file you can share it with other users and they can load the data by “drag and drop” into the introductory screen.

The data file needs to be a **json** file that was previously generated by the transect maker. If it is any other file format the data will not be loaded.



The finished **txt** file can now be loaded into the TSCreator Pro program.

Important!!!!!

Even if you only use the "**download project as zip**" method to save your files, you must go to the sandbox from time to time and delete all the accumulated files, otherwise the program will just stop at some point and not save anymore.

It is best to make sure that the Sandbox is empty, before starting a new project.

There is only one sandbox on your computer, therefore all the files you save from the Transect Maker and Lithology Maker will be saved in the same place.