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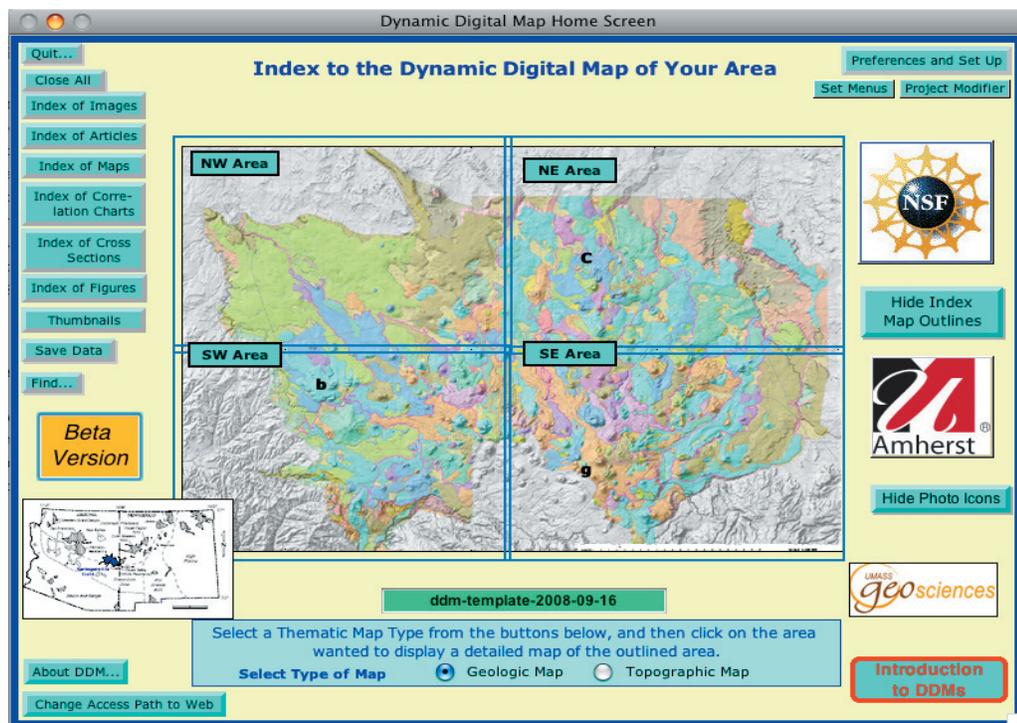
# Introduction to the Cookbook

This “cookbook” provides step-by-step procedures for making a Dynamic Digital Map. The order in which topics are covered in the “cookbook” correspond to the order in which you should proceed in creating a DDM. The process is done by modifying the existing Revolution project “Dynamic Digital Map Template” (ddm-template), and requires a basic familiarity with Revolution. The basics of Revolution can be learned by working through the tutorials found in links at the DDM project home page (<http://ddm.geo.umass.edu>) or the Revolution site (<http://www.runrev.com>). We assume the user is familiar with the use of a CAD program, such as Adobe Illustrator, a photo editing program, such as Adobe Photoshop, a word-processing program, such as MS Word, and a spreadsheet program, such as MS Excel, for analytical data if applicable. Reference is made to the use of several ancillary Revolution programs as well as the ddm-template program itself, which are used in this process. The cookbook is an outgrowth of “crib sheets” created to help students taking Chris’ “Desktop Publishing of Geologic Maps” course at the University of Massachusetts in Amherst. The initial 2005 version was funded by NSF-DUE-CCLI grant 0127331 to Chris. Edits by Suzane Fleury to the 2008 revision are appreciated.

## Summary of DDM-Template Components to Modify

The following are the major components that need to be modified to create your own DDM from the ddm-template. Details on how to do this are spelled out in sections below. The intent of this summary is to give you an overview of what modifications are needed, before you get involved in each step. For a list of all stacks contained in the ddm-template, referred to below, see Appendix 1. Modifications will need to be made to the following components:

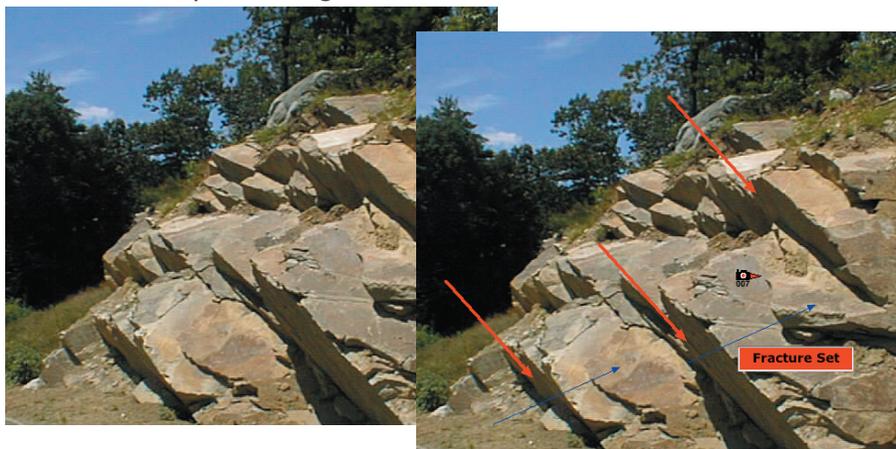
- **The ‘Home Screen’**, the project’s ‘Dynamic Digital Map Home Screen’ stack (or window), which provides links to viewing other more detailed maps of the region. The image object on this screen will be filled with an index map of your area which you have created and saved as a jpeg image. Superposed on this index map are hyperlinked outlines of the map segments included in the DDM. You need to resize and rename these outlines, which are text field objects, as appropriate to match the areas of your DDM. The ‘Home Screen’ also contains buttons that open the different indexes, the ‘Preferences and Set Up’ stack, the ‘Welcome to’ screen (About DDM), and the ‘Find’ function. There is also an optional location map, shown



in the lower-left, that can be filled with a location map of your area. A web link button is shown in the lower-right, which can be linked to a web page of your choice, by altering the web address listed in the button's script. The image on this button can be replaced as well. These image files are stored in the folder 'dataDir'. When creating you DDM project, you can include or remove any of these buttons. To remove a button from the project, simply drag it outside of the view of the user.

- **MapOverlays**, which are groups of graphics and objects, such as icons and text, one for each of the detailed maps (or "map segments") included in your DDM. Each overlay is stored on a separate card in the MapOverlays stack. The simplest overlay may include only two essential objects that are already included in the template and will require no further additions. In most situations, the overlay will also include vector graphics, text (such as unit symbols, sample sites, geographic labels), and hyperlinks in the form of 'camera icons', which can be added by the DDM creator using Revolution and the capability of the DDM-Template program. These overlays comprise a layer of named and scripted objects superposed on top of the raster format map image.

- **ImageOverlays**, containing graphics and scripted objects for each of the photographs or figures (graphs, tables, sketches) referenced in the text of the DDM. These overlay cards are similar to those discussed above for maps, and like them can be made visible or invisible as they overlay images or maps displayed by the DDM program. The overlay is a scrolling group, so that if a window is resized to be smaller than the image filling it, the overlay can be scrolled to see the entire image. Overlays are useful for conveying information and providing links to related media. For example, the photo on the left has no overlay, whereas the photo on the right has an overlay including unit labels and camera icons to link to other photos.



- **Text articles** describing the map, or field trip or any other dialog that pertains to the map. This text is placed in a field "TextField1" which is found in each stack named G#001, G#002, etc.) Additional and separate textural components are the captions (found in fields on the Image Caption Stack card) that describe each of the photographs/figures, and can be displayed by the user as each of the nine "image windows" is viewed. These textural components can be written in a word processor, copied to the clipboard and then pasted into the DDM-Template using Revolution, or imported as "rtf" or "html" format files, using buttons installed in the DDM-Template.

- **Indexes of data associated with the DDM**, which are lists of the maps, images, text articles, correlation charts, cross sections, figures and thumbnail that are included in the project. Each line in an Index describes a component of the DDM (for example, a map segment, an image or an article). These Indexes (scrolling lists of hyperlinked text) provide an index to the project, much like that of a book. The "clickable" capability provides

Index of Maps			
Map #	Type of Map	Area	Find Text
M#001--	Yellow Map	NW Area	
M#002--	Yellow Map	NE Area	
M#003--	Yellow Map	SE Area	
M#004--	Yellow Map	SW Area	
M#005--	Blue Map	NW Area	

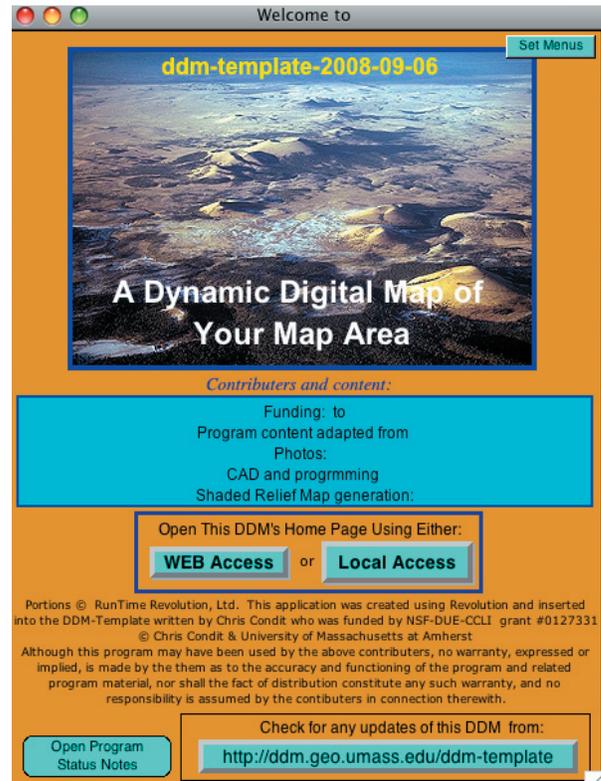
access to each of the included components (maps, images, and articles). Other indexes are optional, depending on the complexity of the project, and may include lists of correlation charts or sample types.

- **Analytical Data**, which the DDM-Template can store and display. Like the textural components, these data can be created in spreadsheet programs and saved as tab-delimited text files, which can then be copied to the clipboard and pasted into the DDM-Template using Revolution, or imported from text files using buttons in the DDM-Template.

Once the creator of a new DDM has included all the components she wants into the DDM-Template, she can then use Revolution to turn the DDM into a stand-alone application. A stand-alone application is one that can run independent of any other program. For example, in a single operation, a Revolution DDM project can be turned into three different applications, one that will run on all Windows versions (including XP and Vista), another on Macintosh OSX (in Macintosh Universal format), and a third on Linux. Because of differences between platforms; for example, font sizes and finding paths to data directories; some testing is advised on each, although we have tried to accommodate these differences in creating the DDM-Template. The DDM-Template is designed to be distributed on CD, DVD, USB flash (aka thumbnail) drives or on the WWW, for which it has built-in access and needs no web browser to obtain its data (mostly in the form of jpeg maps, images and QuickTime movies, stored on a server accessible to http protocol). *Note: DDM capability may be limited if a QuickTime Player for Linux has not been installed on the machine.* The QuickTime Player is free and can be obtained for both Windows and Macintosh from [www.apple.com](http://www.apple.com).

## About the Program Architecture

The DDM-Template has been designed to create web enabled, cross-platform applications. This means that the user can download the stand-alone DDM for their specific operating system from a web page and use the program (by itself, no browser is needed) to access the jpeg format maps and images and QuickTime movies from the web. To minimize application size, almost all images are accessed from outside the program, and only vector objects, text and analytical data are included as part of the application. Because some jpeg images and movies may have large file sizes, efficient web use requires a fast web connection. An alternative is to distribute the DDM on CD, DVD or USB flash drives, and to access these large external files from the CD or DVD drive, or the local hard drive, if the user copies the data to it. The "Welcome to" page allows the user to choose between these options with 'Web Access' and 'Local Access' buttons. The 'Local Access' first checks the application's local directory on its hard drive (or Revolution document's directory, if the DDM is in development) to see if the appropriate data is stored there. If it is not, it then looks for the data on a CD or DVD drive. Likewise, if the program is using web access, the DDM software checks the parent web address (found in the button on the lower right of the 'Welcome to' screen) for a directory that might contain the jpeg (or movie) data. In either case, the DDM's script is looking for either a directory



entitled "ddm-myname", or a CD entitled CD\_ddm-myname. **Thus it is essential for the creator of a DDM to name the DDM with the first three letters being "ddm" followed by a dash, and the next series of letters also followed by a dash.** For example, the home directory on the CD, DVD or http web site for a DDM named "ddm-myname-2008-11-14" would be "ddm-myname". Because DDMs are often products undergoing growth and development, we name them with the date of their last update (followed by the extension ".rev" if it is a Revolution document, that is, a DDM under development). A critical part of access of data via the web includes supplying the program with the http address from which to get data. This is done by changing the title of the button on the lower right side of the "Welcome to" page using the 'Object Inspector'.

## Naming Conventions

We name all ddm programs, files and directories in lower case letters to avoid the problems that uppercase letters sometimes give one when accessing them via the web. We name files with an 8.3 character name to simplify file path access, especially with web servers. The template (and Revolution) places no restrictions on the naming, except that the formatting of the text in the "PhotoList" field of the 'Index of Images' expects a file name of eight characters, followed by a decimal and an extension of three characters ("jpg" for an image, "mov" for a movie). We also interchangeably refer to the Revolution program as the "ddm.template" or "DDM-Template". The former works best when saved as a file on disk, the latter feels more comfortable when being used in text, but other than that we attach no significance to the way we use the two.

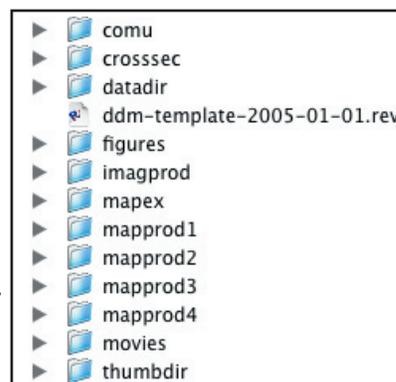
In naming stacks in the DDM, we always concatenate a multi-word name into one word for programmatic reasons (it's easier to copy a single word when editing script, and if we choose to alter the DDM's stack structure it is easier to do that with single words). However, the **title** of a stack, which in many cases the user sees, can be different than that of the stack name. In displaying a stack title, we almost always space out the words and capitalize them. With the exceptions noted below, in only two cases do we depart from this and actually change the words between the name and title: "ImageStackControlPalette" becomes the "Image Window Control Palette" and "MapStackControlPalette" becomes the "Map Window Control Palette". Exceptions to this include, that when running the program, the map and image stacks change their title to reflect their content. For example, the title of the "Map" stack tells the user what thematic map type and area the map stack is displaying, and an "Image" stack tells the user what the image is that it is displaying. Also stacks containing articles (named G#001 to G#xxx) are shown by the DDM with a title that matches their description as found in the 'Index of Articles'. The last exception is that palettes displaying data may have a title that reflects their content rather than their stack name.

## The Directory Structure of a DDM

A typical DDM is organized with its components residing in the following directory structure, all located in a directory whose name is that described above (ddm-template in the below case):

A brief description of the files and directories is as follows, from most to least critical:

**ddm-template-2008-09-16.rev** - the DDM program itself (either a Revolution document as here, with the ".rev" extension, or as a series of stand-alone programs, one for each platform. It resides in the parent directory "ddm-template", where it can most conveniently access its ancillary files (for example, maps, images, movies). We name the programs by the date on which they were last modified, using the



convention YYYY-MM-DD, followed by a lower case letter if more than one modification was made that day.

**comu** - a directory into which jpeg files of the 'Correlation of Map Units' are stored. All correlation charts are referred to with 'CC#' and a unique number, for example, 'CC#01'.

**crosssec** - a directory into which jpeg files of cross sections are stored. All cross sections are referred to with 'XC#' and a unique number, for example, 'XC#01'.

**datadir** - a directory into which a jpeg image of the index map is stored, along with the NSF logo, the location map and the Geoscience Department link button. These are displayed when the 'Dynamic Digital Map Home Screen' window is opened. It also contains an important text file named "**ddmdata**".

**ddmdata** - a text file that is used by the program to make sure it has located the correct directory from which to load its files.

**nsf\_logo.jpg** - a jpeg image of the National Science Foundation Logo, which is displayed by the DDM when the 'Dynamic Digital Map Home Screen' is open.

**locinset.jpg** - a jpeg image of the location map for your area.

**geosci\_logo.jpg** - a jpeg image with a web-link in its script.

**indexmap.jpg** - a jpeg image showing the setting in which more detailed map segments are found, and on which outlines of the different map segments are drawn.

**+/- jpeg files** used for Guided Tours (e.g. **menuosx.jpg**, **winkey.jpg**, etc.)

**figures** - a directory into which jpeg files of the figures included in the 'Index of Figures' are stored. All figures are referred to with 'F#' and a unique number, for example, 'F#001'.

**imagprod** - a directory into which jpeg images of photos or pictures are stored.

**n8000a.jpg** - a jpeg image for display in the DDM (the first in the DDM-Template's 'Index of Images'. All images are referred to with 'S#' and a unique number, for example, 'S#001')

**mapex**- a directory in which jpeg images of map explanations are stored. Each map segment has a unique number, starting with 'M#001', 'M#002', ..., and the jpeg images for corresponding map explanations are likewise numbered "expl001, expl002, ...". If no individual jpegs are stored for different map segments (by name), the plain white jpeg image "generic.jpg" is opened by default.

**mapprod1** - a directory into which jpeg images of thematic map type 1 (for example, a topographic map) are stored. These files are detailed maps of, in this case four areas.

**sw.jpg, nw.jpg, ne.jpg, se.jpg** - jpeg files of the various quadrants of the map area

**mapprod2** - a directory into which jpeg images of thematic map type 2 (for example, an orthophoto) are stored. These image files are detailed maps of, in this case four areas.

**sw.jpg, nw.jpg, ne.jpg, se.jpg** - jpeg files of the various quadrants of the map area

**mapprod3, mapprod4** - additional types of thematic maps might be stored in these directories. Up to nine thematic maps may be added by making additional 'mapprod' directories.

**movies** - a directory in which QuickTime and QuickTime Virtual Reality movies are stored.

**c8h6pan.mov** - a QuickTime Reality panoramic movie, in this case might be listed in the DDM-Template's 'Index of Images' as 'S#002'.

**thumbdir** - a directory into which jpeg files of thumbnails are stored.

**+/- web site documents**- for example, **index.html**, and associated jpeg files.

## Modifying Your DDM Project

A key part of creating a DDM project is putting your maps, images and movies in the correct location for the program to open them. The program looks in particular directories for particular files, as described in the section "About the Program Architecture". Indexes created in the program provide the user access to these files. The indexes of maps, correlation charts, cross sections and figures are created in the 'Data Stack', whereas the 'Index of Images' and 'Index of Articles' are edited from the 'Project Modifier'. These two important stacks allow you to make many alterations to your project: the 'Project Modifier' and the 'Data Stack'.

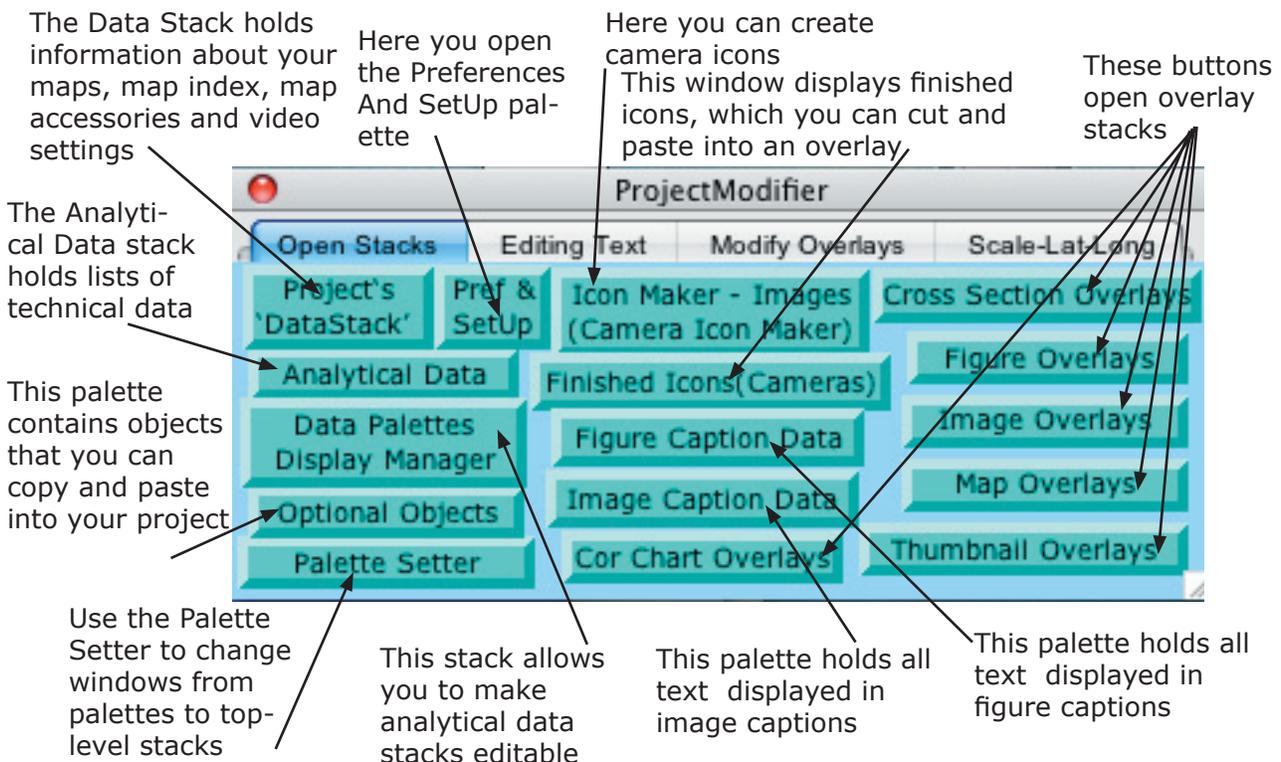
### The Project Modifier Palette: Explanation of Button Functions

You will get to know the 'Project Modifier' very well. It can be accessed through the 'Preferences and Set Up' stack, opened by its button on the upper-right corner of the 'Home Screen', or directly by option-clicking (alt-clicking for PCs) the 'Preferences and Set Up' button. The 'Project Modifier' stack contains many buttons whose functions will be very useful. The 'Project Modifier' provides access to the 'Data Stack', Map Overlays, Image Overlays, Analytical 'Data Stack' and the 'Palette Setter'.

After inserting the content files into your project, you can use the 'Project Modifier' to edit these. From the 'Project Modifier' you can:

- 1) Enable editing of the 'Index of Images', the 'Index of Maps' and the 'Index of Correlation Charts'; and save your edits.
- 2) Enable editing of image or figure captions and text articles.
- 3) After you have added your images and/or maps, you can create image/map overlay cards for them (necessary for adding labels or links to your images/maps).
- 4) Enable editing of overlays here.
- 5) Replace overlays in image or map overlay stacks.
- 6) Copy or create optional objects used to customize your project.

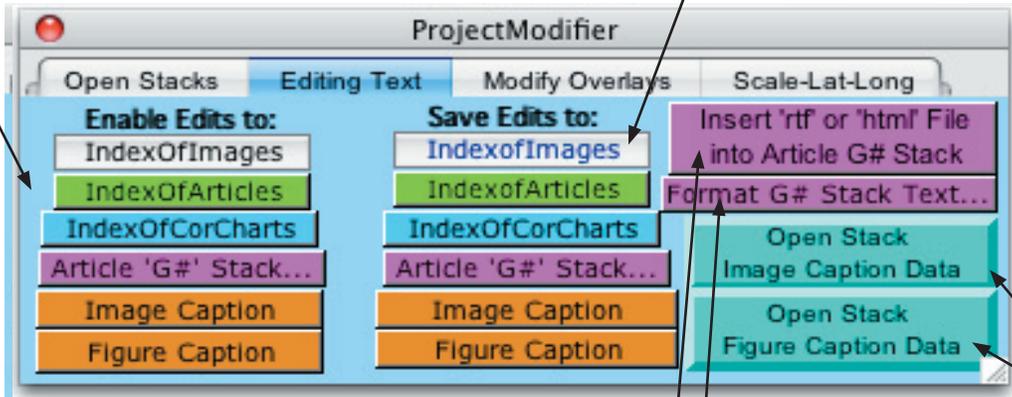
Tab 1: Open Stacks



Tab 2: Editing Text

These buttons enable editing of the index or article you choose

These buttons save your edits and reset the index or article for use



This button inserts text from a file into an article stack

This button automatically sets links to text in article stack

These buttons open the Image or Figure Caption data stacks, which holds all text displayed in the respective caption fields

Tab 3: Modify Overlays

Ungroups image or map overlay and removes scroll bars to allow editing

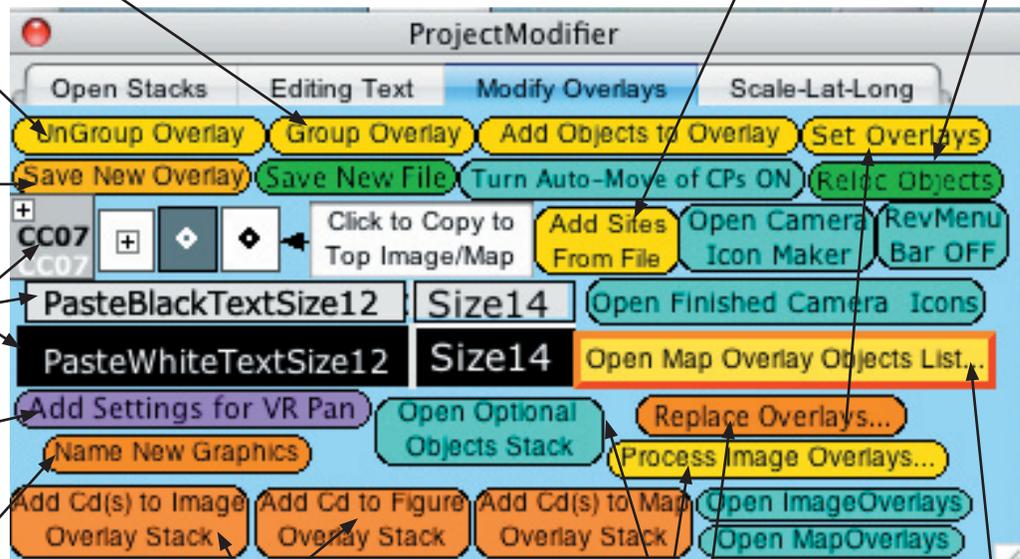
Groups image or map overlay and adds scroll bars

Click to open MainStack, rename and save project as new file

Click to add site or labels at x,y or lat-long locations on map from list in file

Use to move the image/map back to correct location

Saves (replaces) overlay of top image/map into project



Click to copy these features to a map or image overlay

Click to modify setting on a virtual reality pan of an image

Click to give all unnamed labels on top image or map window a name that is the same as their TextData

Add new cards to image or map overlay stacks if needed

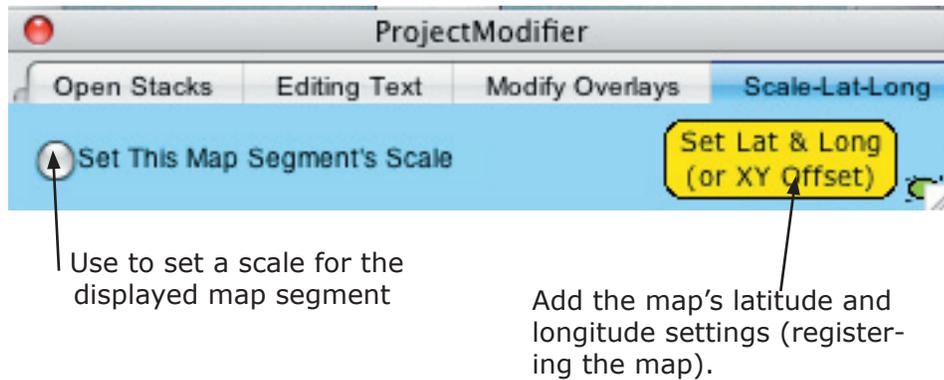
Click to open stack with optional objects to copy & paste into your project

Use to correct overlay sizing to match images

Use to copy particular objects between maps, images, etc.

Use to copy overlays between maps, etc.

Tab 4: Scale and Lat-Long

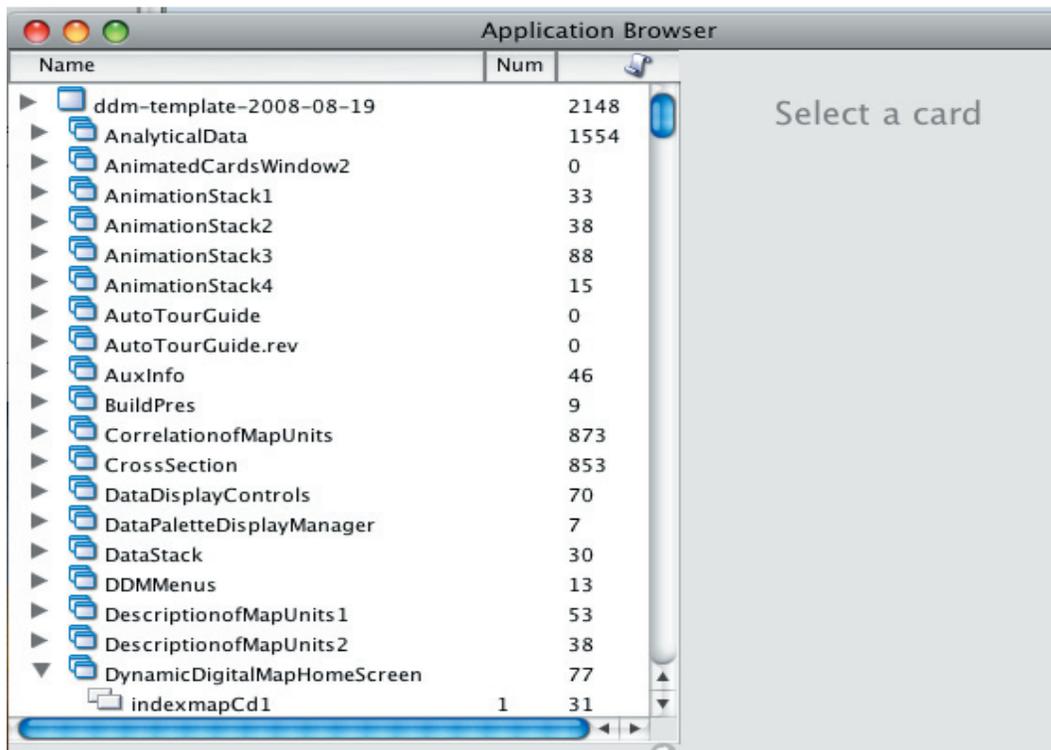


### The 'Application Browser'

Revolution's 'Application Browser' is an alphabetical list of all stacks and cards in your project. It can be opened from the 'Tools' menu. It is a good place to check on the status of what you are doing ("Did it just add all those image overlay cards? Let me check..."). In addition to using the "Open Stacks" tab of the 'ProjectModifier', it is here where you will access cards to edit:

- 1) Map Correlation Chart overlays and buttons
- 2) Map Explanation overlays and buttons
- 3) Animation stacks
- 4) 'AuxInfo' stack

You can also access all of you cards here to change their properties.



# The Data Stack: Explanation of Button Functions

The 'Data Stack' can be accessed from its button on the 'Open Stacks' tab of the 'Project Modifier', or in the alphabetical list of cards in the 'Application Browser' ('Tools' menu). In the 'Data Stack' you can:

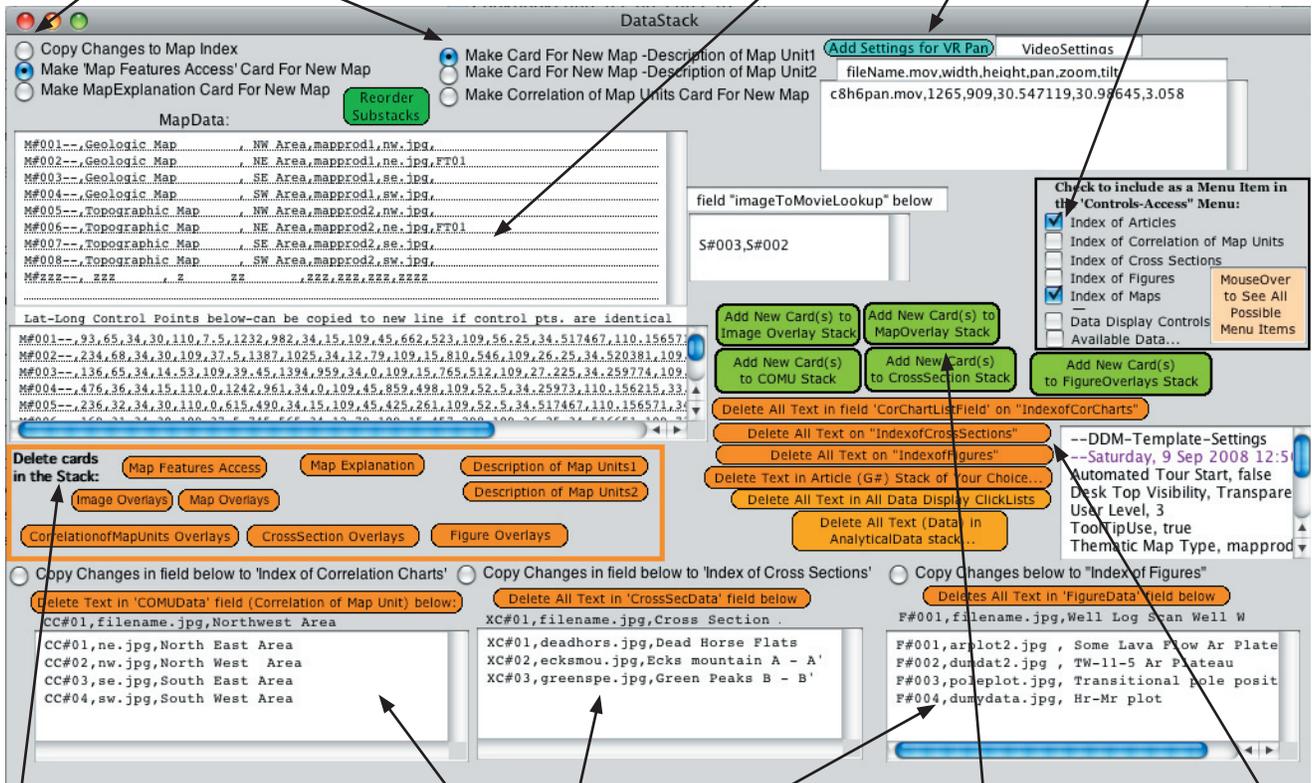
- 1) Create the 'Index of Maps', 'Index of Correlation Charts', 'Index of Cross Sections' and 'Index of Figures'
- 2) Create new 'Map Features Access', 'Map Explanation', 'Correlation Chart', 'Cross-Section' and 'Figure' cards
- 3) Delete pre-existing cards and text from the template
- 4) Edit the 'Controls-Access' menu
- 5) Adjust Quicktime settings

With these buttons, you can make new cards for the appropriate stacks

Use this button to adjust the settings for Quicktime virtual reality panoramic movies

Enter data for the map index here, then copy your changes to the index stack

Use these check-boxes to edit the 'Controls-Access' menu



Use these buttons to delete all cards in the appropriate stacks

These fields hold data for the indexes of correlation charts, cross-sections and figures. The buttons above allow you to edit and save this data.

After deleting pre-existing cards, add new cards to the image, map, correlation chart, cross-section and figure stacks

These buttons delete text data in different stacks so new data can be added

## Making Changes

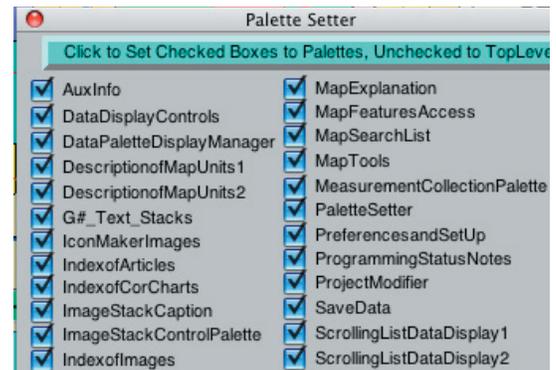
### Revolution's Run vs. Edit Tools

The Run (browse) tool,  is usually used to access the functions of the buttons, as the user would.

The Edit (pointer) tool  selects buttons and other objects and allows you to open their 'Object Inspector' to change their properties (with a double click). These uses are not entirely intuitive, so it is important to pay attention to the tool instructions in the cookbook, especially if you are new to object oriented programming.

### Palette vs. Toplevel

Some windows, such as the 'Project Modifier', are set as palettes in the DDM-Template. Palettes are typically meant for controls and access buttons, and can only be used with the Run tool. They float above all other windows, except other palettes opened after them. Some windows will be made palettes for the final stand-alone application. These include the 'Map Image Window Controls', all three Indexes, and the 'Map Features Access' and 'Map Explanation' cards. While your project is still under construction, in order to edit these stacks, you must make them 'TopLevel' stacks. The 'Palette Setter' button on the 'Open Stacks' tab of the 'Project Modifier' allows you to quickly change the listed windows from palettes to toplevel stacks as needed.



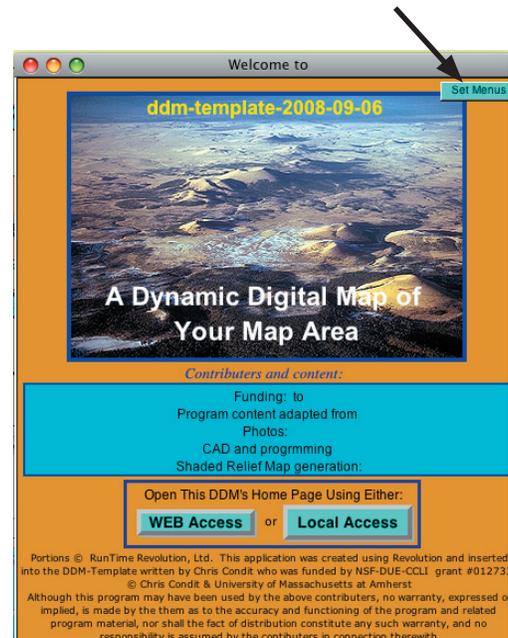
## To Open the DDM-Template Program for Modification

- 1) Start Revolution
- 2) Use the 'File-Open' menu to open the project ddm-template-2008.xx.xx
- 3) If using a Mac, click on the 'Set Menus' button in the 'Welcome to' stack's upper right, and select 'Revolution User Interface' in the pop-up dialog box.



This toggle switch changes the menus between those used by the finished or stand-alone DDM (DDM menus), and those used by the programming interface (Revolution User Interface). *Note: Windows-based computers do not need to toggle the menus.* Script has been added to hide this 'Set Menus' button when you finally make this Revolution project into a stand-alone application (see the section "Making a DDM Revolution Project into Stand-alone Applications" below).

- 4) A critical part of access of data via the web includes supplying the program with the http address from which to get data. This is done by changing the label of the button on the lower right side of the "Welcome to" page, using the 'Object Inspector'. Use the edit tool and right-click on the button whose label starts 'http//



. In the Object Inspector's 'Basic Properties' tab, change the label to the URL for your new DDM. For example, the DDM of New England's URL is 'http://ddm.geo.umass.edu/ddm-ne/'. When done, close the Object inspector palette.

6) To advance beyond the 'Welcome to' page to the 'Dynamic Digital Map Home Screen', the user must choose either the 'Web Access' or 'Local Access' button. The 'Local Access' actually checks the application's local directory on its hard drive (or Revolution document's directory, if the DDM is in development) first to see if the appropriate data is stored there. If it is not, it then looks for the data on a CD or DVD drive, looking in the example above, for a folder named 'ddm-ne'. Likewise, if the program is using web access, the DDM software checks the parent web address for a directory of that name that might contain the jpeg (or movie) data. Choose the appropriate button depending on where you are accessing your data files. In this case, you are creating a DDM on your own machine, and all the files are on your hard drive, therefore you are using Local Access. To view a DDM from the DDM website, you must use Web Access.

7) To help you create your DDM from this ddm-template, many controls and access to them, have been programmed into a stack called the 'Project Modifier'. This is accessed from a 'Project Modifier' button on the 'Dynamic Digital Map Home Screen' and a similar button on the 'Preferences and Set Up' stack. Note that when the DDM project is turned into a stand-alone application, these buttons are made invisible.



### Saving a Modified DDM

When you've made modifications to a DDM, you should save the new version of the DDM program to preserve your work. After you've opened your project, and before you save it, I recommend you move your just opened DDM's disk file to a folder reserved for older versions of your DDM. For example, in the case of the DDM-NE, I make a folder named ddm-ne-OldVersions, located within the folder ddm-ne, and transfer the previously opened ddm file to it. I name my DDMs by date, and if I have other versions of the DDM I am working on that have the same date, I append the time to the end of the file name, in 24 hour clock format, preceded by an underscore, for example, ddm-ne-2008-10-01\_2337. Note that the "mainStack" of any DDM is the first stack loaded, and the one to which all other stacks belong as "subStacks". When it is opened, the entire DDM file is loaded into RAM.

To save your stack, first you need to bring your main stack to the front, so it is the "top stack". There are two ways to do that:

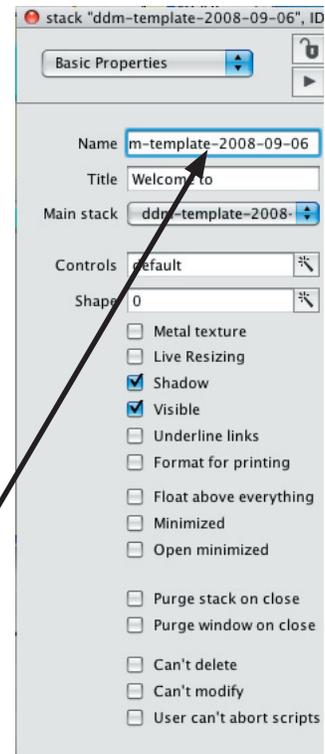
1) From the 'Dynamic Digital Map Home Screen' stack, click on the 'About DDM' button in the lower-left corner with the Run (browse) tool. This takes you back to the 'Welcome to' screen, which is the mainstack of this project, or:

2) Alternatively, you could go to the 'Window' menu, and select the line with you DDM's name, setting a checkmark there. It will look as if nothing has changed, but this is because the stack you just brought forward is located off the screen, to the upper-left.

There are also two alternatives to saving your stack:

2a) If you want to simply update the DDM in a file retaining its same name, you can now select 'Save' from the 'File' menu.

2b) Alternatively, if you want to save your DDM giving it a new name, go to the 'Object' menu, and select 'Stack Inspector'. Rename your stack in the 'Name' field of the 'Basic



Properties' tab. Then use the 'File-Save As' menu to save.

*Note: If you do not change the name of your DDM's mainStack in the 'Basic Properties' card, the text on the "Welcome to" screen will not be updated, although your **file** name will be changed.*

*Note: Be sure that the beginning of your file name matches the overall directory name. For example, for a DDM of the Rocky Mountains with a main folder named 'ddm-rmt', the application file should be 'ddm-rmt-2008-09-23'. This is important because if you are using the "Local Access" option, the DDM will look to open files from a home directory that is named with letters matching those before the first and second dashes in the DDM's name.*

*Note: it is strongly recommended that you remove previous versions of your DDM from the directory that your active version is located in. If you don't, Revolution will slow down significantly.*

## Editing the 'Control-Access' Menu

The user will be able to access indexes from the 'Controls-Access' menu. This menu resides in the header, so the user can open an index without having to shuffle windows around to find the 'Home Screen'. Use the checkboxes on the right side of the 'DataStack' to edit which indexes are included in this menu.

The screenshot displays the 'DataStack' application window. At the top, there are several radio buttons for map-related actions: 'Copy Changes to Map Index', 'Make Map Features Access' Card For New Map', 'Make MapExplanation Card For New Map', 'Make Card For New Map -Description of Map Unit1', 'Make Card For New Map -Description of Map Unit2', and 'Make Correlation of Map Units Card For New Map'. A 'Reorder Substacks' button is also visible.

The main area is divided into several sections:

- MapData:** A list of map units with columns for ID, description, area, and file path. A 'field "imageToMovieLookup" below' is shown with the value 'S#003,S#002'.
- Lat-Long Control Points:** A table of coordinates for map units. A note states: 'Lat-Long Control Points below-can be copied to new line if control pts. are identical'.
- Stack Management:** Buttons for 'Add New Card(s) to Image Overlay Stack', 'Add New Card(s) to MapOverlay Stack', 'Add New Card(s) to COMU Stack', and 'Add New Card(s) to CrossSection Stack'. There are also buttons for 'Delete All Text in field "CorChartListField" on "IndexofCorCharts"', 'Delete All Text on "IndexofCrossSections"', 'Delete All Text on "IndexofFigures"', 'Delete Text in Article (G#) Stack of Your Choice...', 'Delete All Text in All Data Display ClickLists', and 'Delete All Text (Data) in AnalyticalData stack...'.
- Menu Configuration:** A section titled 'Check to include as a Menu Item in the "Controls-Access" Menu:' with checkboxes for 'Index of Articles', 'Index of Correlation of Map Units', 'Index of Cross Sections', 'Index of Figures', 'Index of Maps', 'Data Display Controls', and 'Available Data...'. A 'MouseOver to See All Possible Menu Items' button is also present.
- Template Settings:** A dropdown menu showing 'DDM-Template-Settings' and a timestamp 'Saturday, 9 Sep 2008 12:5...'. Other settings include 'Automated Tour Start, false', 'Desk Top Visibility, Transpare User Level, 3', 'ToolTipUse, true', and 'Thematic Map Type, mapprod'.
- Index Management:** Radio buttons for 'Copy Changes in field below to "Index of Correlation Charts"', 'Copy Changes in field below to "Index of Cross Sections"', and 'Copy Changes below to "Index of Figures"'. Below these are buttons for 'Delete Text in "COMUData" field (Correlation of Map Unit) below:', 'Delete All Text in "CrossSecData" field below', and 'Deletes All Text in "FigureData" field below'.

At the bottom, there are three columns of data for different map units (CC, XC, F) with their respective filenames and descriptions.

# Steps to Adding Maps to the DDM-Template

## An Overview of Parts of the Template to Modify to Add Your Map

When the template is opened, the index map appears on the 'Home Screen'. From the index map, the user can click on outlined segments to open detailed maps of different areas. Buttons at the bottom of the home screen allow you to include multiple maps with different themes, each of which can be loaded on the home screen or in the map segments. These thematic maps can also be accessed from the 'Index of Maps', located on the upper-left of the 'Home Screen'. For each map, you can create a map overlay, which holds objects such as location labels, sample sites or graphic elements that help the user understand and navigate your map. The overlays can also contain "camera icons," which serve as links to images, and scaling tools. In order to get your maps up and working, the following items must be completed (tailed instructions follow the below list):

- (a) Create and identify your base map file(s).
- (b) Set the map segment outlines on the Index Map to link to separate map segment files, or to scroll to a particular area of you basemap.
- (c) Add links to your thematic maps by entering this text data in the DDM's 'DataStack'.
- (d) Create new blank map overlays (new cards in the 'MapOverlays' stack).
- (e) Set up buttons on the 'Home Screen' and 'Preferences and Set Up' stack to change the thematic map type.
- (f) Add camera icon links and any wanted labels or graphic.
- (g) Add a scale factor for linear and area measurements and latitude-longitude registration.

*Note: The following few pages discuss steps for adding your maps. Do **not** try to open your maps until you have completed all the steps in this chapter as they are co-dependent.*

## Adding Map Access from the 'Dynamic Digital Map Home Screen' Window

First, you need to create your index map and map segment files:

- 1) Your basemap image should be saved as a JPEG at a resolution that shows adequate detail on the full screen size.
- 2) For the DDM 'Home Screen' you will need to resize your basemap so that the entire image fits into the 'Home Screen' window. Do this in Adobe Photoshop, using the 'Image -> Image Size' option and changing the pixel dimensions. Set to 72 dpi.
- 3) Save this image as 'indexmap.jpg' in the 'datadir' folder of your DDM directory. You should save a similar base map for each type of thematic map, scaled identically.
- 4) Save each of your thematic maps at full size as JPEGs into their own 'mapprod' folder. For example, 'mapprod1' folder would contain the file 'bedrock.jpg', 'mapprod2' folder would contain the file 'surficial.jpg'. Map files should be no larger than 4000x4000 pixels at 72 dpi.

Map files should be saved with an 8.3 file name - the file name is eight, lowercase letters, and the extension is three lowercase letters. If you have multiple files that you want to confirm that they have the correct file name format, use the File Name Utility program, discussed in Appendix 10.

Map segments can be used in two different ways. Notice how the map segment outlines on the template denote areas of the index map. These outlines can either call up sections of the

index map as individual files (the index map cut into pieces), or it can call up the entire index map, scrolled to center in different positions for different areas of the map. These different areas are termed "map segments". If your map file is very large, it may be better to cut it into pieces for the higher resolution segments. Map segments have a size limit of 4000 x 4000 pixels.

For separate map segment files:

- 1) For each thematic map, open at full size in Adobe Photoshop. Use the Marquee tool to select the area of one segment.
- 2) Copy this area with Command-C (or control-c on PC).
- 3) Open a new document in Photoshop and paste in your selection.
- 4) Flatten the layers on this image from the Layers palette menu.
- 5) Save each segment as a new JPEG file, with names corresponding to the segment location. Segment files should be saved in the appropriate 'mapprod' folder for their theme. For example, 'ne.jpg', 'se.jpg', 'nw.jpg' and 'sw.jpg', are good to use. If you want to have more than the four segments that exist in the template, go ahead and create these segment files. Instructions on how to create additional map segment outlines are below.

For scrolling maps:

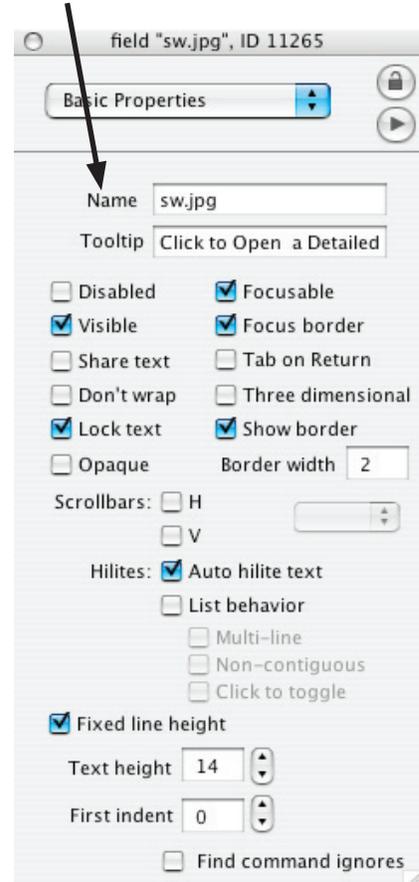
- 1) For this option, each map outline link will open the same file, but scrolled at a different position, depending on where on the index map outline the user clicks. Orienting the segments will be covered a later section ('Aligning Map Segments for a Single File').
- 2) For now, all you need is each thematic map saved in its own 'mapprod' folder at full size.

Linking the map segment outlines to your segment files:

- 1) Using Revolution's Edit (pointer) tool, you can select and move the map segment **outlines**, keeping their size proportional to that of their respective map segment.
- 2) To link a map segment outline to a file, select the outline and open the 'Object Inspector'.
- 3) Change the '**Name**' to the name of your segment file. Use only lower-case letters in this field.
- 4) For the segment labels (blue boxes labeled NE Area, SE Area, etc.), make sure **NO** name appears in the 'Name' field of the 'Object Inspector' - it should start out with the words "field id" followed by a number. Make sure each is placed entirely within its respective map segment outline, because it gets its name and the location to open to from that outline and its placement within it!. For these you **can** change the text that appears on the screen in the lower, large box under the **Contents** tab in the 'Object Inspector' (here you can use both lower and upper-case letters). You must edit the labels in the 'Object Inspector' because their text is locked. Remember an object's (in this case a text field) name property is different from its label property (the text a user sees).
- 5) You will probably want to change the yellow "Tooltip" text (for both the map segment outlines and the segment labels) to correspond to what you want the pop-up information to say, using Revolution's 'Object Inspector' palette, 'Basic Properties' tab.

Making additional map segments:

- 1) For the 'Home Screen' Index Map, you can make additional map segment outlines and labels by selecting an existing one and copying it (Command or control-C).
- 2) Paste the object onto the screen.
- 3) Open the 'Object Inspector' to rename the outline and rename and change the contents on the label.



## Adding a Map Segment File to the 'Index of Maps'

We need to add the map segment's name and a few other pieces of information about it to the list contained in the 'Index of Maps', so the program can use this information to find the correct directory on the hard disk, CD, DVD or the web. To add maps to this index:

- 1) Open the 'Data Stack' from its button on the 'Project Modifier' (access by option-clicking the 'Project Modifier' button from the 'Home Screen').
- 2) You'll see a scrolling white text field on the upper left, that contains one line for each map segment. The "ddm-template" includes four map segments for each of two thematic types, for a total of eight maps, numbered "M#001" to "M#008". These need to be replaced by those that correspond to your DDM, or removed if you have fewer maps. There are five columns, separated by aligned commas, that need to be preserved with padding spaces as you change the data. Change the map segment data by clicking in the field with the Run (browse) tool, and typing exactly as you would with a word processor. *Note: **Do not use any extra commas beyond those that divide the columns, and use no "&," "!" or "%" characters** - they mess up the menu item that is added to the windows menu when a*

The screenshot shows the DataStack application window. At the top, there are several radio buttons for map features: 'Copy Changes to Map Index', 'Make Map Features Access' Card For New Map (selected), 'Make MapExplanation Card For New Map', 'Make Card For New Map -Description of Map Unit1', 'Make Card For New Map -Description of Map Unit2', and 'Make Correlation of Map Units Card For New Map'. Below these are 'Reorder Substacks' and 'Add Settings for VR Pan' buttons. The main area contains a 'MapData:' list with entries like 'M#001-- ,Geologic Map , , NW Area,mapprod1,nw.jpg, ...'. Below this is a 'Lat-Long Control Points' section with a table of coordinates. At the bottom, there are three text fields for 'Delete Text in 'COMUData' field', 'Delete All Text in 'CrossSecData' field below', and 'Deletes All Text in 'FigureData' field below'. The interface is cluttered with various buttons and checkboxes, including 'Check to include as a Menu Item in the 'Controls-Access' Menu:'.

new "Map" window is opened.

- 5) Leave the first column of this line alone (the "M#001--" entry).
- 6) In the second column, replace the words "Geologic Map" with those that best describe to the user the thematic map type for this map (for example, "Surficial Map", "Lithologic Map" or "Orthophoto Map"). You should use spaces here to justify the column and align the separating commas.
- 7) In the third column, replace the words "NW Area" by ones that will give the user an idea of the area encompassed by your first map segment. You should use spaces here to justify the column and align the separating commas.
- 8) The fourth column, in line 1, tells the program what folder all of your map segments for the first thematic map type will be stored in; in this case you can leave the entry "mapprod1" alone.

- 9) The fifth column contains the file name for this map segment. You should replace the "ne.jpg" with the file name for you first area of thematic map type. If your map segments all open the same file but at different alignments, you only need to enter one line per thematic map. *Note: The fourth and fifth columns must not have any extra spaces. These characters are put together to form the path directory for the file to load.*
- 10) The sixth column is where you might place letters that represent any field trip or text discussion (one per map) that you might want to have associated with this map. It must have a three letter identifier, for example, FT1). This same identifier must be included in the 'Index of Articles' (see 'Adding Text and Captions to Template'). This is essential so that the hyperlinks from map to text articles work correctly.
- 11) Continue altering the list until you have all your maps segments for all thematic types entered.
- 12) Delete any excess lines at the end or within the list. Be sure to leave the last line with all "zzz's" in the field, but have no other excess lines below that one, because the program counts the number of lines in this list when creating 'Map Overlay' cards that match each map segment.
- 13) Now, to transfer this work to the 'Index of Maps' stack, click on the button named "Copy Changes to Map Index", found on the top left side of the 'Data Stack'. If you open the 'Index of Maps' stack you'll see the M#, thematic map type and area description have been transferred to the Index's scrolling field. **Do not use it yet!** (see next step).

## Creating 'MapOverlay' Cards for New Map Segments

- 1) Next we have to create new blank map overlay cards for each map. To delete the ones we've created for this ddm-template, click on the orange 'Map Overlays' button in the orange rectangle at the left side of the 'Data Stack'. *Note: After you have created any new map overlay cards, do not use this delete button again or you will lose your previously created overlays! It is a one-time use button, used only to clean out the template's original overlays.*

The screenshot shows the 'DataStack' application window. At the top, there are several radio buttons for actions like 'Copy Changes to Map Index' and 'Make Card For New Map'. Below this is the 'MapData' section with a list of map entries (M#001 to M#008) and a 'zzz' placeholder. To the right, there's a 'field "imageToMovieLookup" below' with the text 'S#003,S#002'. Further right is a 'Check to include as a Menu Item in the "Controls-Access" Menu:' section with checkboxes for 'Index of Articles', 'Index of Correlation of Map Units', 'Index of Cross Sections', 'Index of Figures', 'Index of Maps', 'Data Display Controls', and 'Available Data...'. Below these are several 'Add New Card(s) to...' buttons for Image Overlay Stack, MapOverlay Stack, COMU Stack, CrossSection Stack, and FigureOverlays Stack. A large orange rectangle highlights a 'Delete cards in the Stack:' section with buttons for 'Map Features Access', 'Map Explanation', 'Description of Map Units1', 'Image Overlays', 'Map Overlays', 'Description of Map Units2', 'CorrelationofMapUnits Overlays', 'CrossSection Overlays', and 'Figure Overlays'. At the bottom, there are three sections for deleting text in 'COMUData', 'CrossSecData', and 'FigureData' fields, each with a list of entries and a 'Delete All Text' button. A date stamp 'Saturday, 9 Sep 2008 12:51' is visible on the right side.

- 2) Click on the green 'Add New Card(s) to MapOverlay Stack' button on right side of the 'Data Stack' (Note: a similar button exists on the 'Modify Overlays' tab of the 'Project Modifier').
- 3) *When you add new maps to your DDM, you should follow all of these steps except deleting the map overlays.*
- 4) Save your newly modified DDM (see "Saving a Modified DDM" section in the "Introduction to the Cookbook" chapter for instructions).
- 5) You should now be able to open your maps from the 'Home Screen' or the 'Index of Maps' (make sure that the DDM file is located in the DDM folder, and the map image files are located in their respective 'mapprod' folders).

## **Aligning Map Segments for a Single File**

Versions of the DDM-Template dated 2008-09-16 and later include script in the index map's outlines that automatically scroll the map segment to the location on the Home Screen's index map that is clicked on. Likewise, any labeled text field object, placed within these outline fields, if the labeled field is copied from those in the template, will center the opened map segment to the location that label field is placed within its respective map segment outline. It is important to copy the label field in the template if you need more, because they have the appropriate script attached to them needed so it will pass the mouse-click on to its respective enclosing index map outline field.

Note that to be sure that the location the opened map segment scrolls to corresponds that that the user clicks on in the index map outline, it is essential to make the index outline proportional to the size of the map segment opened. If you are not overly concerned that there be an exact correspondance, simply eye-balling the outline as you resize it over the index map should be sufficient.

## **Setting Buttons to Change Thematic Map Types**

Buttons on the bottom of the 'Home Screen' allow the user to view your different thematic map types. These buttons must be set up on the 'Home Screen' and also in the 'Preferences and Set Up' palette.

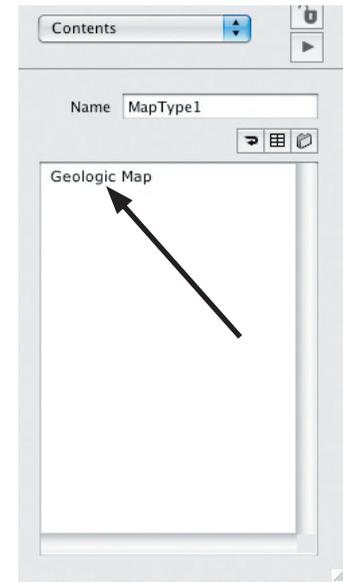
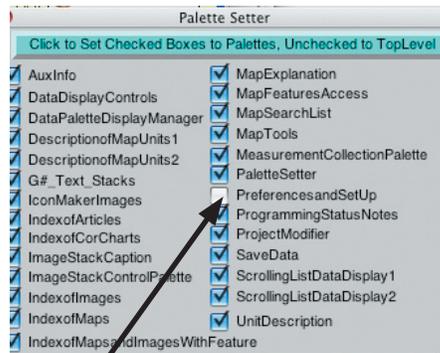
- 1) Open the 'Dynamic Digital Map Home Screen' stack. If necessary, use the 'Stack Inspector' palette's 'Size and Position' tab to make the stack resizable.
- 2) Drag the lower right corner to resize it so you can see all the buttons and labels stored beyond the display window space. If the stack is not resizable, use the 'Stack Inspector' palette's 'Size and Position' tab to select the 'Resizable' box.
- 3) The buttons and labels you see have already been programmed to open different thematic maps. Some of these buttons are visible on the 'Home Screen' ("Geologic Map" and "Topographic Map") and the rest are placed below so you can add them, if necessary, by dragging them into the visible part of the stack. The ddm-template can accommodate up to nine different thematic maps, with nine pairs of buttons and their associated labels. On the template, these buttons are located in a blue field, with a prompt: "Select Type of Map". *Note: The buttons are paired with their adjacent text fields, and must be moved together. The text field's script sends a "mouseUp" message to the button it's paired with. If you scramble them, you'll have to figure out which belongs to which!*
- 4) Move the number of paired buttons you need into the visible part of your 'Dynamic Digital Map Home Screen' stack, and leave the others out of sight. *Note: The program needs to have all nine buttons in it to run properly, so don't delete any of these, but rather drag the number needed to the visible part of the card. When you convert the project into a stand-alone application, the 'Home Screen' will become a fixed size, so as to keep objects outside of the view window hidden.*
- 5) Each button is programmed to open maps from a certain folder (for example, "mapprod1",

"mapprod2", etc.). Select a button with the 'Edit' tool, and open the 'Object Inspector'. This button is set to open maps from the folder named in the 'Name' field. Let's say, for example, you are starting with the button programmed for the folder 'mapprod1'. First, you put all your Topographic maps (or other theme) into this folder. Then change the text of the button's label to reflect this map theme by selecting the label with the 'Edit' tool, opening the 'Object Inspector', 'Contents' tab, and renaming the label to "Topographic" in the large contents field as shown. Do this for each button and 'mapprod' folder that you wish to use.

6) Next, open the 'Palette Setter' stack from a button in the 'Open Stacks' tab of the 'Project Modifier' stack. Uncheck the box for the 'Preferences and Set Up' stack and click the button at the top of the window to make it a toplevel stack. Then open the 'Preferences and Set Up' stack.

7) Buttons for different thematic maps are located on the 'Preferences and Set Up' stack as well. Using the Edit tool, re-label these buttons and check their 'Object Inspector' to confirm which 'mapprod' folder they are each linked to.

8) When you're done, reset the 'Preferences and Set Up' stack to a palette in the 'Palette Setter' stack. You're ready to open maps!

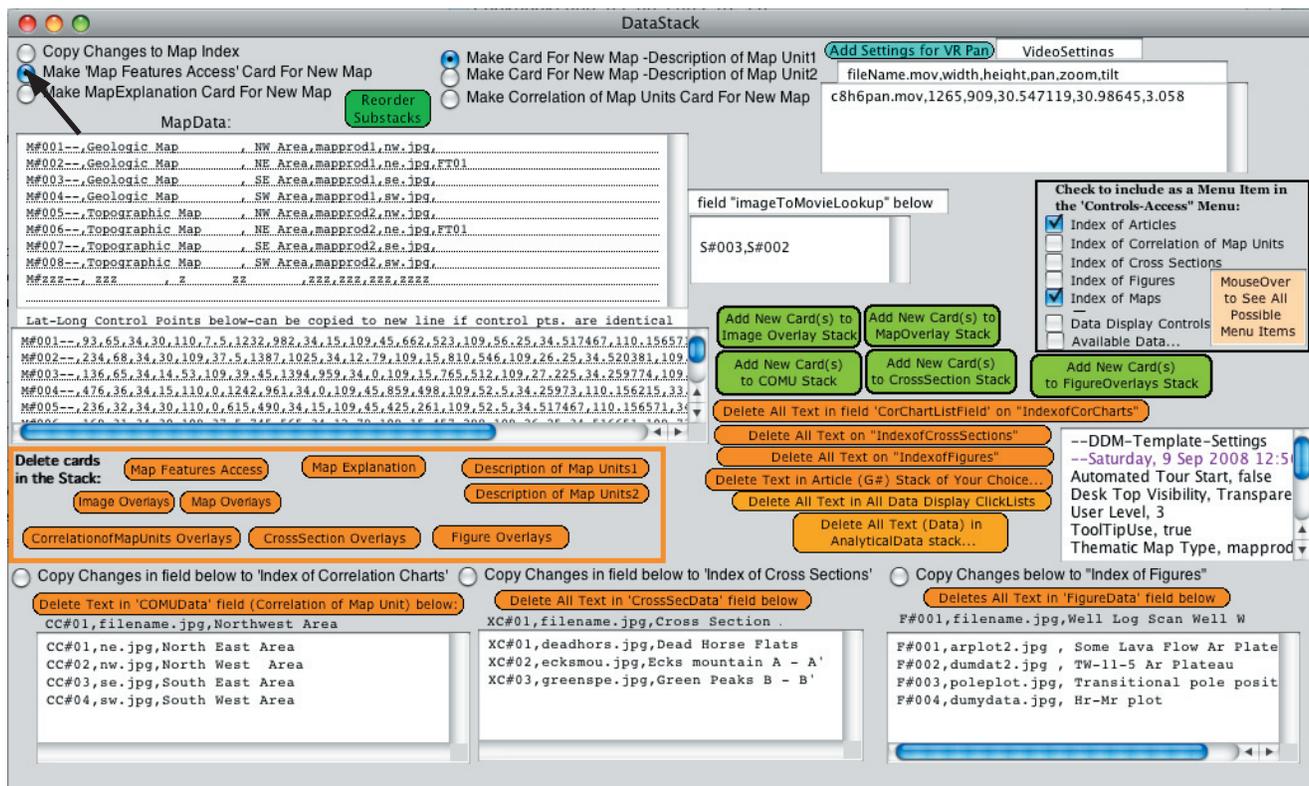


# Optional Features for Maps

When a map is displayed, there are various associated features that can be displayed as well. These features can be accessed through the 'Map Features Access' stack, and include the map search list and map explanation cards. Alternatively, you can choose to automatically display these stacks upon opening of the map by checking the appropriate options in the 'Preferences and Set Up' stack.

## Adding Cards to the 'Map Features Access' Stack

When each map is displayed, a small floating palette named the 'Map Features Access' stack is displayed (the option to display it automatically can be set in the 'Preferences and Set Up' palette). The stack loads by default with a single card named "generic.jpg" as the card displayed. This card has four buttons that let the user (1) open a "Search List" (of all named features on the open map); (2) open a 'Map Explanation' palette for the map; (3) open any guidebook or "Text" associated with the open map; and (4) open the 'Preferences and Set Up' stack, so they can change the 'Map Type'. You may want to have additional options for a given map. If so, you should create new cards, one for each map you load. You can do this from buttons on the stack 'Data Stack', which can be opened from the first button on the 'Open Stacks' tab of the 'Project Modifier' (or by using Revolution's 'Application Browser'). Once you've added all your maps (or just a new one) click on the button "Make Map Features Card for New Map"; this will make a new card for each map in your project, with names that correspond to the overlay card associated with that

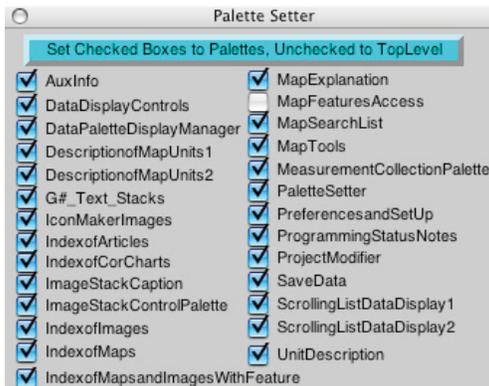


map (for example "mapprod1/ne.jpg"). The default generic buttons are found on each. You can modify them (add buttons, for example, one to hide/display field trip route graphics, etc.) to accommodate each map. The program will automatically resize this palette to fit the new button locations for each card, and will also reset the stack to be a palette that the user cannot resize, when it opens as a "stand-alone" program.

## Modifying the 'Map Features Access' Stack

You can add or delete buttons from the 'Map Features Access' stack and change their labels, depending on your needs.

- 1) Open a map, so that the 'Map Features Access' stack comes up.
- 2) In the 'Project Modifier', open the 'Palette Setter' from a button on the 'Open Stacks' tab.



- 3) Uncheck the 'Map Features Access' stack check box and click the bar (button) at the top of the window to make the 'Map Features Access' stack a toplevel stack.

- 4) Use the Edit tool to select the button, delete them, rearrange them or change their properties ('Object Inspector').

- 5) To add buttons, open the 'Optional Objects' stack with the button on the 'Open Stacks' tab of the 'Project Modifier'.

- 6) Copy and paste the button(s) from this stack into your 'Map Features Access' stack and follow the directions in the 'Optional Objects' stack for your new button.

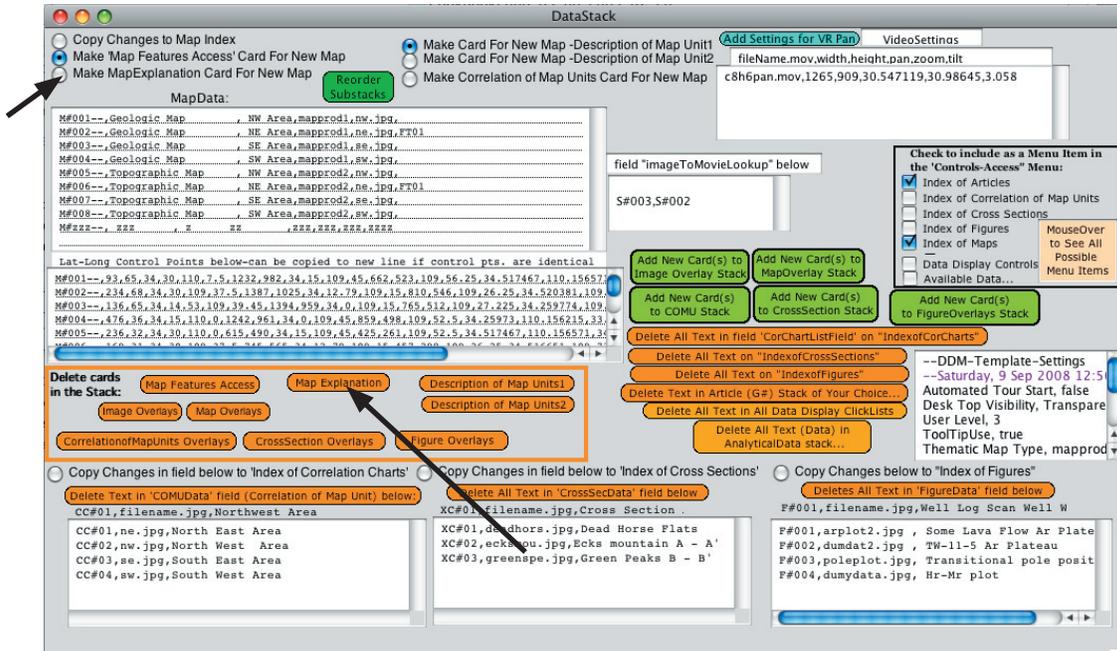
- 7) In the 'Palette Setter' stack, check the 'Map Features Access' stack check box and click the button at the top of the window to change the 'Map Features Access' stack back to a palette.

## Adding cards to the 'Map Explanation' Stack

When each map is displayed, a floating palette named the 'Map Explanation' stack can be displayed, from a button on the 'Map Features Access' palette or the 'Controls-Access' menu. The 'Map Explanation' stack holds your map's legend. The stack opens a single card named "generic.jpg" by default, when it cannot find a card in the 'Map Explanation' stack whose name matches the name of the open map. You can create as many custom map keys for your maps as you like, which is useful because different thematic maps need different explanations. You can create a map key using an illustrator program such as Canvas, and saving it as a jpeg file for the program to display in this palette.

To display your map key jpeg, you need to create a 'Map Explanation' card for each map you load. You can do this from buttons on the stack 'Data Stack', which can be opened from the first button on the 'Open Stacks' tab of the 'Project Modifier' stack (or by using Revolution's 'Application Browser'). If you are making new cards for all your maps for the first time:

- Click the orange 'Map Explanation' button in the "Delete cards" box of the 'Data Stack'. This will remove the existing generic cards (there should be just one remaining).
- Then, click the radio button labeled "Make Map Explanation Card for New Map" at the top of the 'Data Stack'. This will make a new card for each map in your project. The card's name will correspond to the M# of the map, which in turn corresponds to the pathway of the map file. For example, 'Map Explanation' card, "expl001" corresponds to map M#001, which corresponds to the overlay named "mapprod1/ne.jpg" (found on a card with that name in the 'MapOverlays' stack) and with a map found in the "mapprod1" folder that has a file name "ne.jpg".



If you are making a new card(s) for an added map and want to retain your other cards:

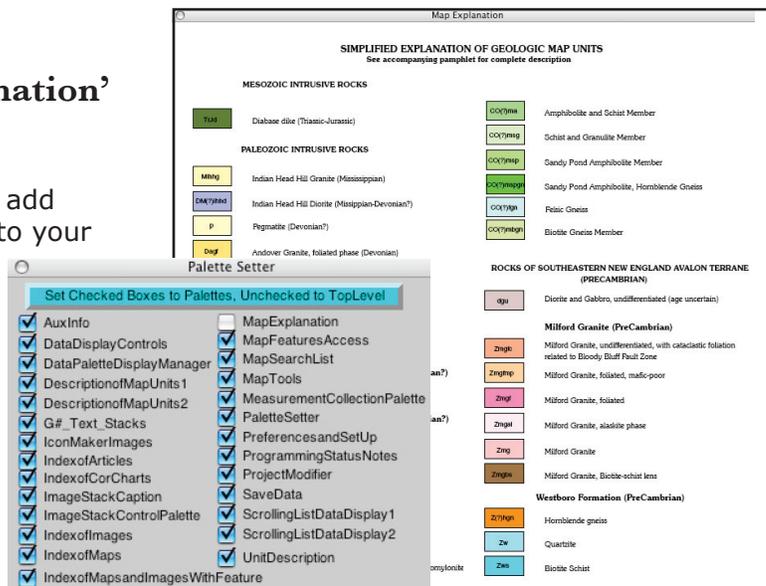
- Just click the radio button labeled "Make 'Map Explanation' Card for New Map" at the top of the 'Data Stack'. This will make a new card for each new map added to your project. The card's name will correspond to the M# of the map, which in turn corresponds to the pathway of the map file. For example, in the original ddm-template, 'Map Explanation' card, "expl005" corresponds to map M#005, which corresponds to the overlay named "mapprod2/nw.jpg" (found on a card with that name in the 'MapOverlays' stack) and with a map found in the "mapprod1" folder that has a file name "ne.jpg".

You can see these cards listed under 'Map Explanation' in the 'Application Browser'.

When you save your jpeg 'Map Explanation' images for each map, you must name them starting with "expl" (for explanation), followed by the last three digits in the map's "M#" (for example "expl001", here). Your 'Map Explanation' jpegs should reside in a subfolder named "mapex" in your project directory. The program will automatically resize the 'Map Explanation' palette to fit the jpeg image for each card, and will also reset the stack to be a palette that the user cannot resize, when it opens as a "stand-alone" program.

## Editing 'Map Explanation' Cards

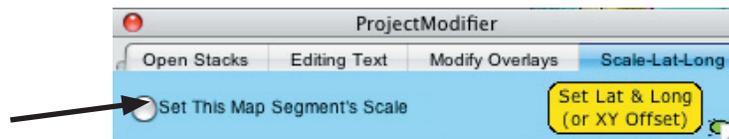
You may rearrange/add buttons, add clickable fields, or make other changes to your 'Map Explanation' cards. In order to do this, you must first make them 'toplevel' stacks. Open the 'Palette Setter' from a button on the 'Open Stacks' tab of the 'Project Modifier' stack. Check or uncheck the appropriate box to toggle between palette and toplevel settings for the stack. To do this, follow steps 2 to 7 in the above section entitled "Modifying the 'Map Features Access' Stack".



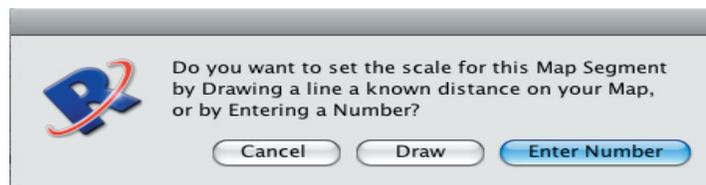
## Adding a Scale Factor to a Map

Each new map segment should have a scale factor added so one can use the Tools palette to make linear and area measurements. This is done while viewing the new map segment and using a button on the 'Project Modifier' stack. Use of this button fills in a field in the map segment's overlay that contains the number of km/pixel (and mi/pixel) - which is easier thought of as the inverse of the number of pixels per km or mi (for example 1/pixel/km). If you already know the number of pixels in each km or mi, the set-up button gives you the option to enter that directly, and thus set your map segment's scale. If you don't know that, but do have a graphic showing some known distance, you can use that with the set-up button, and enter the known distance either in km or mi. You can use fractions (e.g. 0.1 km for 100m), and draw a line of that distance to set your scale factor.

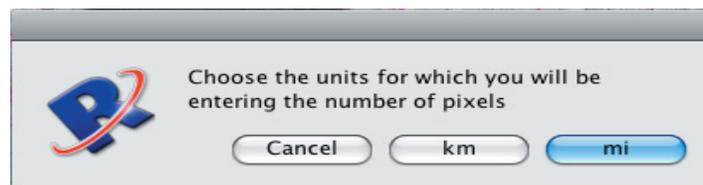
- 1) First, open the 'Project Modifier' to the 'Scale-Lat-Long' tab.



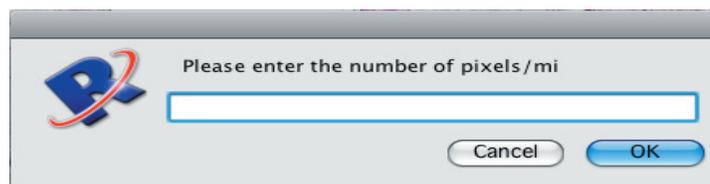
- 2) Click on the radio button labeled 'Set This Map Segment's Scale'.
- 3) To the question "Do you want to set the scale for this Map Segment by Drawing a line a known



distance on your Map, or by Entering a Number?", answer by clicking either the "Draw" or "Enter Number" button. The "Enter Number" option is in (4) below, the Draw option is in (5) below.



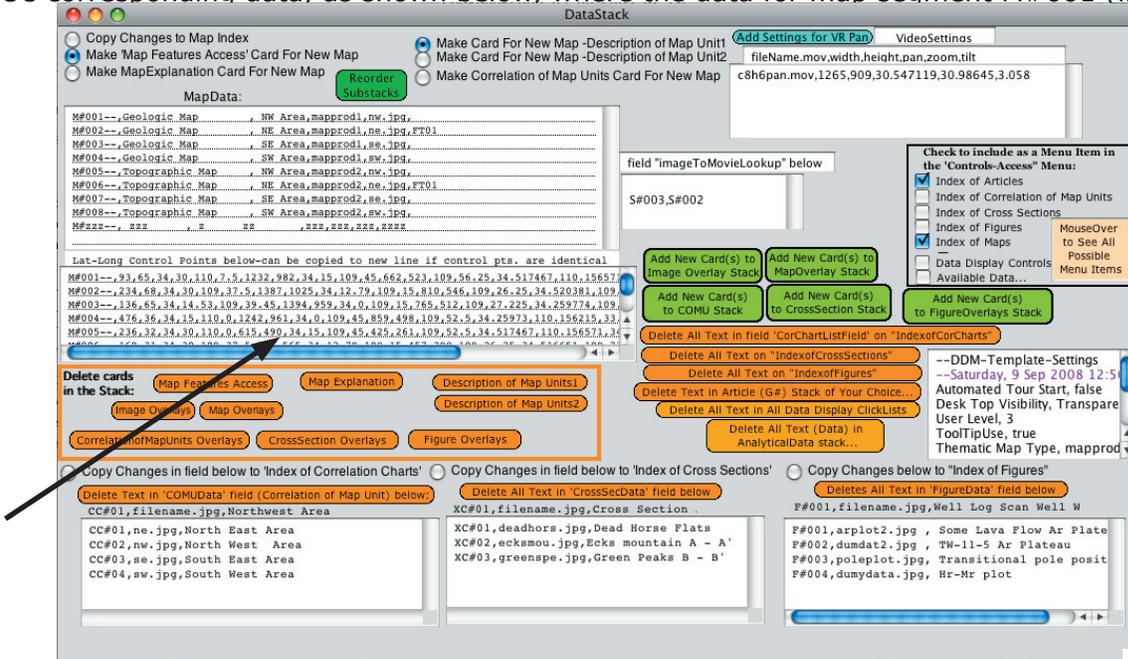
- 4) If you choose the "Enter Number" option, then:
  - a) You will be asked to "Choose the units for which you will be entering the number of pixels", with the choice being either km or mi. Pick your units, or "Cancel" out, by selecting that option.



- b) Next, you'll be asked to "Please enter the number of pixels/km" (or mi, if those are your units). Enter in a number, or select "Cancel" if you want to bail out.
  - c) If you entered a unit, you'll get the notice that "Your scale for THIS map segment has been entered both for pixels/km and pixels/mile. Now I'll save your change!".
- 5) If you choose the "Draw" option, then:
    - a) You'll get the message "What units are you using on your map scale?" with two choices: "km" or "mi". Select one.

## Adding Latitude and Longitude Values to a DDM

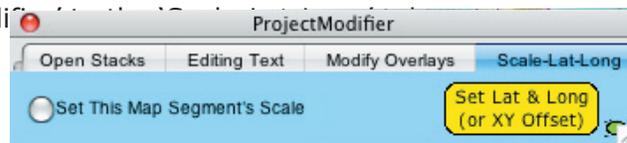
Each new map segment should have latitude and longitude coordinates added so one can locate features using the read-out showing the cursor location, found on the right side of the 'Map Window Control Palette'. This is done while viewing the new map segment, and using buttons on the 'Project Modifier' stack. Use of these buttons fills in a line (for each segment) in a field in the "DataStack" that contains the pixel location (x,y) of two corresponding latitude-longitude coordinates (the NW and SE corners of a rectangle). It also includes the central pixel's location and its longitude. If you have already set these values for one map line segment, and they are identical for another, you can simply copy the line's corresponding data, as shown below, where the data for map segment M#001 (line 1) has



been copied to that for M#004 (line 4).

To add latitude and longitude coordinates, first open the map segment for which you have these values (the further apart the NW and SE coordinate's pixels are on the map, the more accurate the DDM's lat-long readouts will be). Next:

1) Open the 'Project Modifier' stack.



2) Click on the yellow button labeled 'Set Lat & Long (or XY Offset)'.

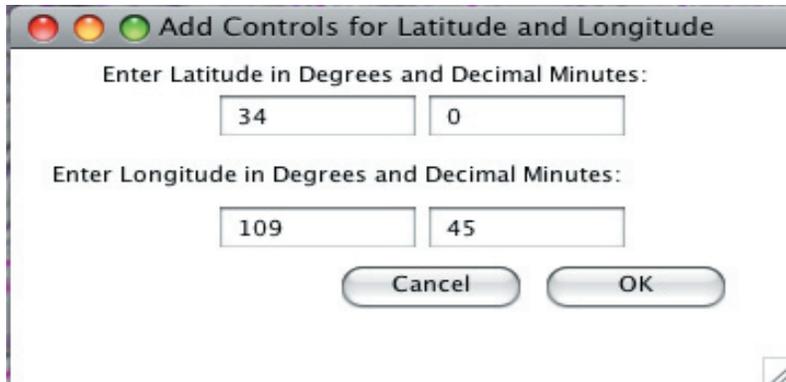
3) From the dialog box, choose the 'NW' button. Then select the format you wish to use when



you enter your latitude and longitude. Note that the format buttons will remain grayed out until you select which point you wish to enter (for example, 'NW').



- 4) Enter the latitude and longitude values for your control point in the NW corner of the map image.



- 5) Next the program will ask if you want to locate the NW control point yourself or simply use the first (upper left) pixel. If you choose 'First Pixel' the program will tell you it entered that value. If you choose 'Let Me Select the NW Lat-Long Location' the map will scroll so you can see the NW control point's pixel, and close any open overlying palettes.
- 6) Follow the same process for registering the SE lat-long control point, again stating with clicking on the yellow button labeled 'Set Lat & Long (or XY Offset)'. At the end of your location procedure for the SE point the program will ask you 'Do you want me to 'Find' the Central Longitude X & Y pixels & automatically calculate the Longitude from the data you just entered?' . I recommend you answer "Yes" unless you know the location and longitude of your central control point.
- 7) If you choose to locate the central longitude, go through the same procedure as above to enter the longitude only.

If at any point you find out you've entered the wrong location or Lat-Long values, you need only relocate the X,Y pixel in question and enter the correct Lat or Long, and the program will replace only those items as needed in the line. Alternatively, you could choose to edit the line for that particular map segment in question, in the 'MapLatLongData' field.

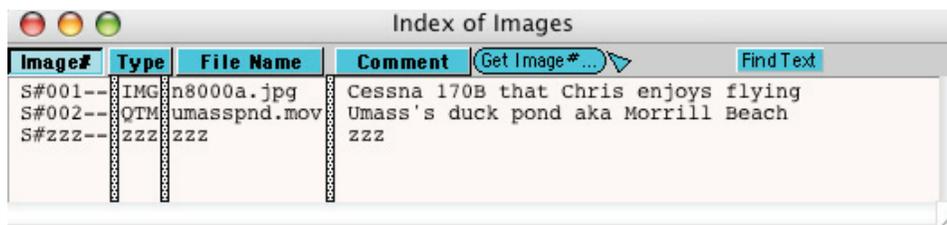
Finally, if you have an image map with no Lat-Long coordinates, but want to include an X,Y offset for the program to use to display these values, after clicking on the yellow 'Set Lat & Long (or XY Offset)' button, you can simply select the 'XY Offset' option, and follow instructions to click on that pixel. The program will then store only these XY values in the line associated with that map segment.

# Steps to Adding Images to the DDM-Template

## Adding Images to the List in the 'Index of Images'

Before adding image file names to the 'Index of Images', the image files must all be saved in the DDM's 'imagprod' directory. The images should be saved as jpeg files, with a lower-case name of eight characters or less, followed by a three-character file extension (i.e. 'outcrop1.jpg', 'site1.jpg'), as discussed in the Introduction. If you have multiple images that you want to confirm have the correct file name format, use the File Name Utility program, discussed in Appendix 10. Also, if any of your raw images need to be processed, for example, rotated, resized or converted to JPEG format, you can perform these identical functions to a group of files using the batch processing capability of Adobe Photoshop, discussed in Appendix 9.

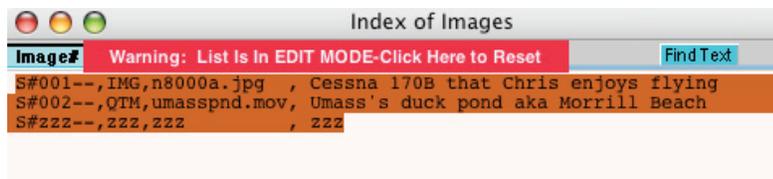
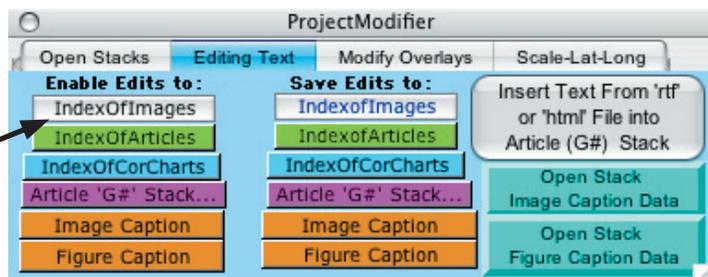
- 1) Start Revolution.
- 2) You will want to resave your project as a new file to preserve your old copy (before these changes). Follow the instructions in the section 'Saving a Modified DDM', and save your file (with a new name, if wanted).
- 3) Next click on the 'Local Access' button to open the 'Dynamic Digital Map Home Screen' stack.
- 4) Open the 'Index of Images' (use the button at upper left of the 'Home Screen' window). Also open the 'Project Modifier' palette by clicking on the 'Project Modifier' button found in the top right of the 'Home Screen' window. The 'Index of Images' contains four columns: Image Number, Type, File Name and Comments. The user can sort the list by any column by clicking on the column header.



- 5) Each new image must be listed on a separate line in the "PhotoList" field of the 'Index of Images'. You can add images in two ways: a) adding multiple images at once, using a word processor or, b) adding single images directly into the "PhotoList" field.

### Adding Multiple Images:

- 1a) To enable editing of this field, go to the 'Editing Text' tab of the 'Project Modifier', and click on the 'Index of Images' button under the heading 'Enable editing to:'.



- 2a) Select the entire text of the "PhotoList" field in the 'Index of Images' palette, and copy it to clipboard.

- 3a) Open a word processor and paste your text into a new document.

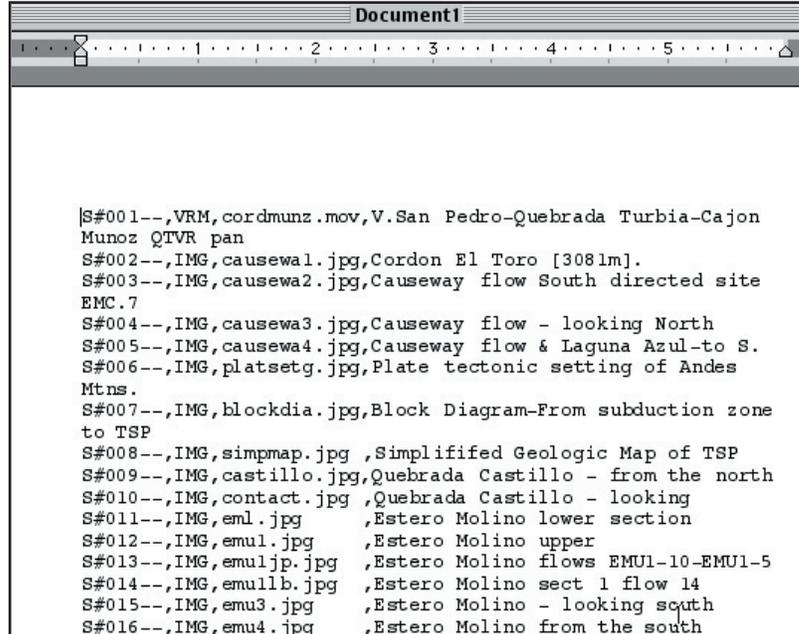
- 4a) Select all your text, and set your font type to "Courier" (best for Mac OSX) or "Courier New" (best for Windows machines), or some other non-proportional font.

- 5a) From the list of images you just pasted, copy the last line (above the line of zzz's). Paste this

line above the line of zzz's as many times as necessary to create lines for all the new images you will be adding.

6a) Modify the image number in each new line, assigning an "S#" in sequence. **Do not skip any image number (S#) or leave blank lines between images.** Note that there is a text-file named "imageList.doc" found in the "HelperDocs" folder with consecutive image numbers that you can modify and use. **We recommend using this to be sure you do not miss any image numbers ("S#").**

7a) Modify the image file names. Be sure to pad your file name with *trailing* spaces if it does not have a full eight characters in the name itself. All images must have an extension of "jpg". A quick way to do this is to go to the "imagprod" folder, list the files by date to be sure you have only new images, and select and copy those "8.3" names to the clipboard, and paste them into your document in the appropriate location. When using MSWord, one can hold the "Option-Shift" key combination down and then select rectangular blocks of text within a list. If you use this technique to select the old file names in the copied lines and delete them, you can then likewise insert the newly copied names from the clipboard into the list. Doing it this way assures that you accurately reproduce the file names into the project.



8a) Because the "PhotoList" field can be sorted by column, you should choose carefully the first word in the "Comments" (or keywords) column. Don't start it with a meaningless modifier (e.g. use 'glacier', not 'the glacier'). **Note: Do not use commas, or "&," "!" or "%" characters in the "Comments" column- they mess up the menu item that is added to the windows menu when a new "Image" window is opened.**

9a) When you're done editing, copy the entire list back to clipboard. Go back to Revolution and delete all previous contents of the "PhotoList" field, and paste in the new data (use the shortcut keys "command (control) v" or the 'Edit-Paste' menu).

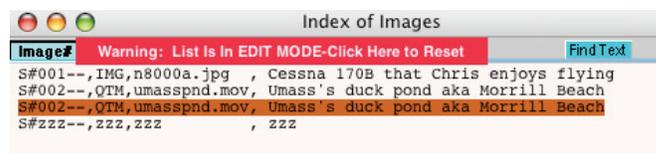
10a) To stop editing, click on the red warning message at the top of the 'Index of Images' palette, or click the 'Index of Images' button in the 'Save Changes to:' outlined box below the 'Enable Editing of:' box from step (5a) above.

11a) Continue in the next section to add a new Image Overlay card(s) to the 'ImageOverlays' stack before attempting to open your images.

### Adding Single Images:

1b) To enable editing of this field, go to the 'Editing Text' tab of the 'Project Modifier', and click on the 'Index of Images' button under the heading 'Enable editing to:'.

2b) Scroll to the bottom of the "PhotoList" field, and select and copy the last line(s) found in that field (above the line of zzz's).

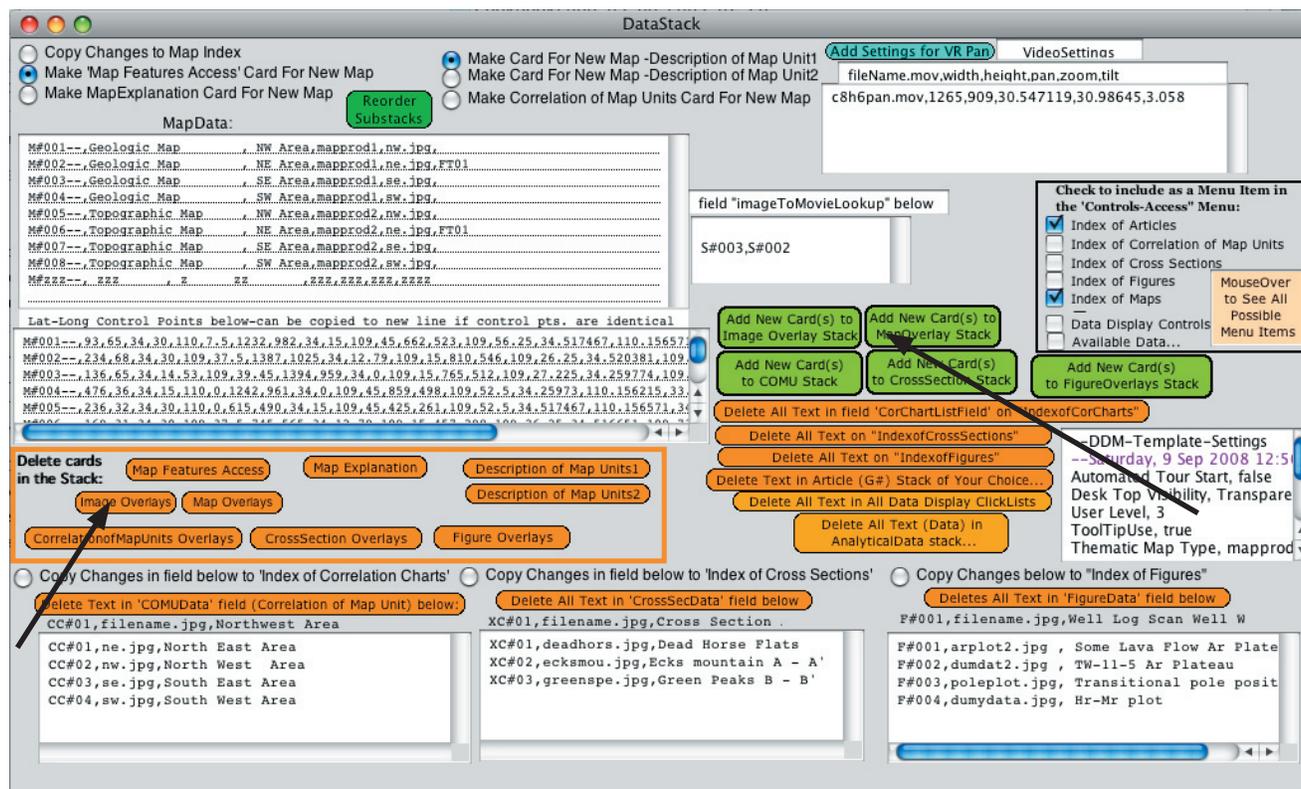


Paste this copied text below the existing last line (just above the line of zzz's), being sure to not add any blank lines.

- 3b) Modify the new line of data by changing the image number (staying in sequence with the image number list), the image name and any comments (or key words) used to identify the image to the user. Because the "PhotoList" field can be sorted by column, you should choose carefully the first word in the "Comments" (or keywords) column. Don't start it with a meaningless modifier (e.g. use 'glacier', not 'the glacier'). **Again, note: Do not use commas, or "&," "!" or "%" characters in the "Comments" column- they mess up the menu item that is added to the windows menu when an new "Image" window is opened.**
- 4b) When you're done modifying the new line, verify that there are no blank lines anywhere in the "PhotoList" field, which should terminate with a line of zzz's. Be sure to pad your file name with *trailing* spaces if it does not have a full eight characters in the name itself. All images must have an extension of ".jpg".
- 5b) To stop editing, click on the 'Index of Images' button in the 'Save Changes to' outlined box below the 'Enable Editing to:' in the 'Editing Text' tab of the 'Project Modifier'.

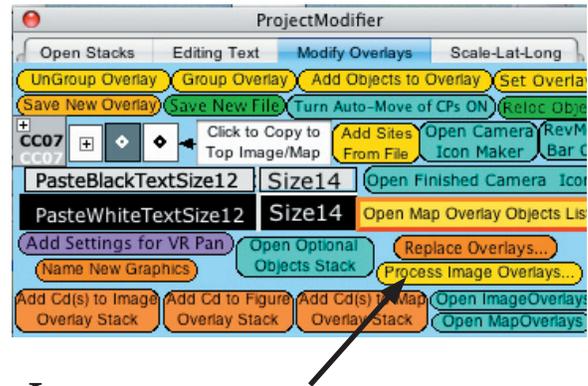
## Adding ImageOverlay Cards for New Images

- 1) Next we need to add new Image Overlay cards to the 'ImageOverlays' stack. But before adding new cards, we must delete the existing cards from the template.
- 2) Open the 'DataStack', from the button on the 'Open Stacks' tab of the 'Project Modifier'.
- 3) Click the orange button labeled 'Image Overlays', located in the 'Delete cards in the Stack' box. The program will respond when it has deleted the cards.
- 4) Next, click the green 'Add New Card(s) to Image Overlay Stack' button on the right side of the 'Data Stack' (Note: a similar button exists on the 'Modifying Overlays' tab of the 'Project



Modifier'). The program will add new cards for each of the image files as entered in the 'Index of Images'. This process may take a while, depending on how many images you have. The program will respond when it has finished creating new cards.

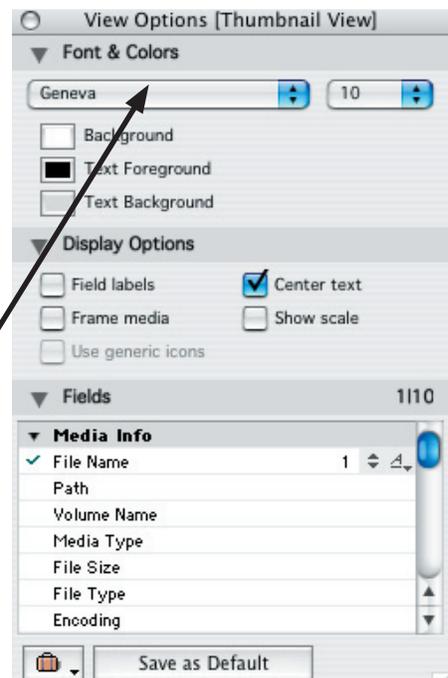
- 5) Now you're ready to open the new image(s). Click on an image in the 'Index of Images' to open it.
- 6) When first opened, the scroll bars and the image stack boundaries may not coincide. To fix this, click on the 'Process Image Overlays' button on the 'Modifying Overlays' tab of the 'Project Modifier'. This works if you have consecutively numbered images to resize; simply answer the questions asked. It is best to process only about 25 images at a time. A progress bar will show what's happening, and the program will display a notice when it's finished. This reformats the overlay to fit the image display window.
- 7) Next we can edit the image's caption, and edit the new image's overlay, by adding fields, graphics or photo icons. See instructions in the following sections: 'Editing Overlays for Images and Maps' and 'Adding Text and Caption to the Template'.

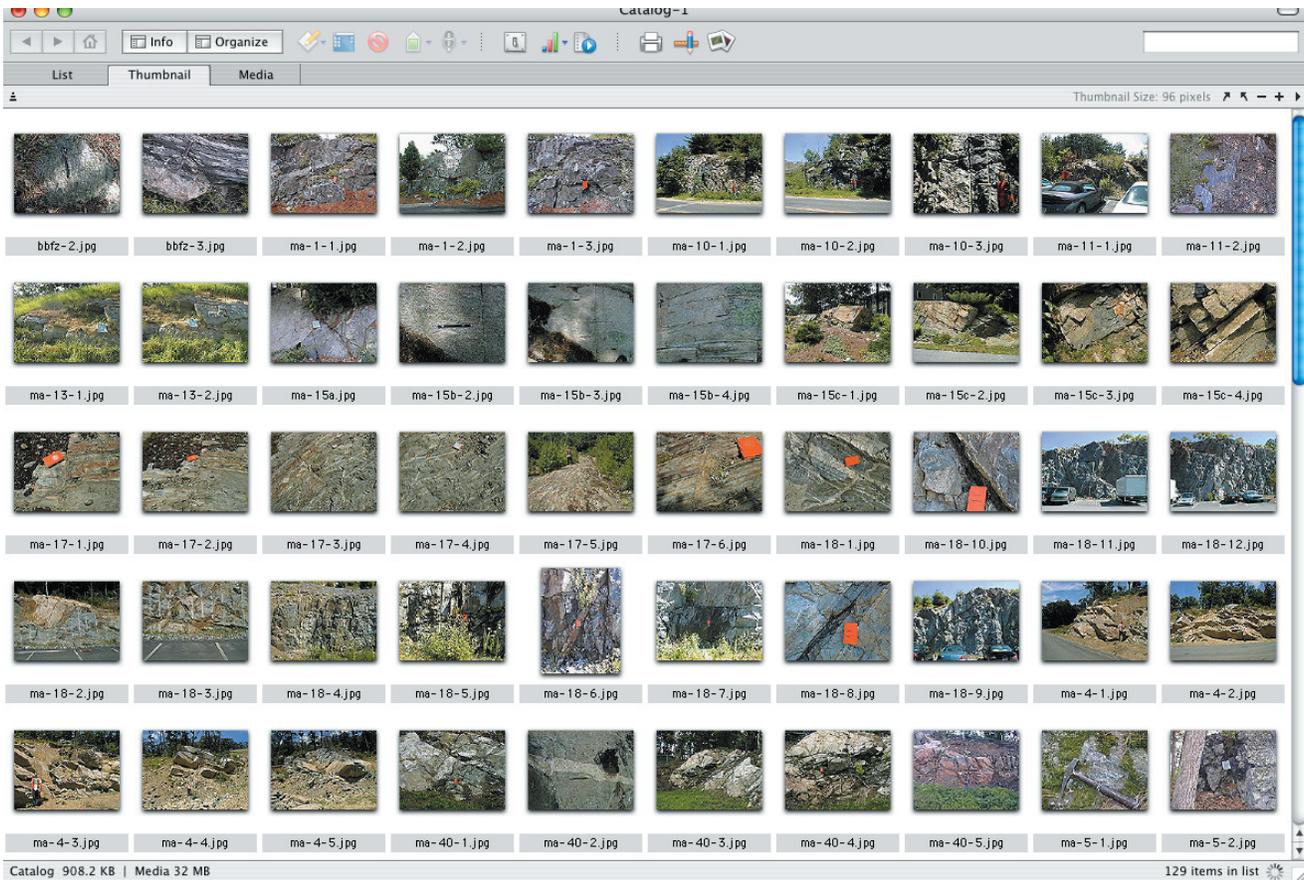


## Creating a Thumbnail Index for Images

The thumbnail index can be accessed from its button on the 'Home Screen'. Creating an index of thumbnails for your images provides the user with an easy way to view multiple images at once, and quickly find the one they are looking for. To make a thumbnail index:

- 1) Make a duplicate of the "imagprod" folder, and be sure it is named "imagprod copy", and that it is located in the same folder as your DDM.
- 2) Make a duplicate of the "movies" folder, and then drag the movie files out of this duplicate into the folder "imagprod copy" folder that you make in step 1 above.
- 3) On the "Home Screen", option-click on the "Thumbnails" button. Again, be sure your "imagprod copy" folder is in the same folder as your project, and that you are working using the "Local Access" option, not the "Web Access" option on your DDM. The option-click will rename all the files in "imagprod copy" folder by appending the "S#" before the file name. For example, an image whose number is "S#001", with a file name of "locatmap.jpg" will get a new file name "S#001-locatMap.jpg". This is done so the thumbnail shots will be presented in the same order as they are found in the "Index of Images".
- 4) Start iViewMediaPro and drag the 'imageprod copy' folder to its open window. If you are not presented with an open window, use the option-n keys to make a new window in which to drag the folder.
- 5) Select the 'thumbnail' tab.
- 6) On the right top side, click on the little triangle that points to the right, and make the following selections (which will then have a "check" mark placed to their left). Thumbnail Size: 96 x 96, Thumbnail Ratio: Normal, Thumbnail Margin: Shadow.
- 7) Make the width of the window large enough so that 10 Thumbnails appear in each row. Make sure you aren't missing any thumbnail images by checking that each row ends with an image that is a multiple of 10 (e.g., 10, 20, 30, 40...). This will assure the Thumbnail sheets you next make will match the size of the overlays saved in the DDM-Template.
- 8) Make a screen grab of these thumbnails, with five (5) lines of thumbnail images at a time. That is, your first screen shot should contain images S#001 to S#050. Your second starts at S#051, and ends at S#100, etc. A screen grab: Mac keys "command-shift-3 (saves it as a

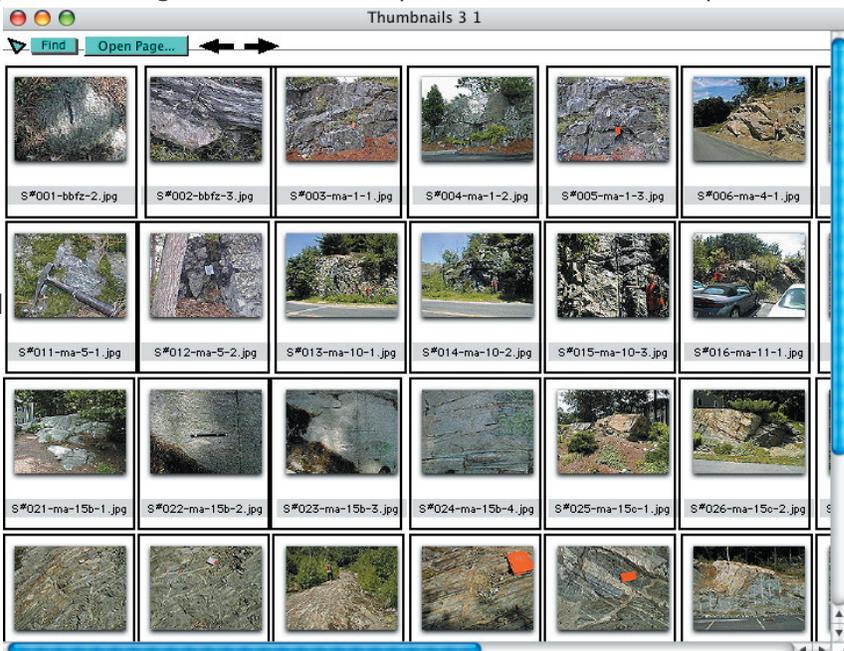




\*.png file to the desktop), Windows keys "Print Screen" saves it to the clipboard.  
 9) Using Photoshop or the like, edit (Crop) the screen shots so only the five lines of interest are found in each thumbnail image, and save them sequentially as JPEG files with file names tnaill001.jpg, tnaill002.jpg, etc. Place these in the "thumbdir" of your project and in the ddmweb folder for your project.

10) In Revolution, open the "Thumbnails" window, using the Thumbnail button on the 'Home Screen". Use the edit tool, and making sure the Menu option "Edit-Select Grouped Controls" is checked,

and if the image is not aligned properly behind the boxes for each in your thumbnails, click between the boxes and drag the image to align it. You may also have to select all the boxes and rearrange them. Do that for each Thumbnail window for which you have "tnaill00x.jpg" images. Note that the stand alone DDM contains script to keep the user from accessing unused cards in the Thumbnail stack, so you can leave them in for future growth.

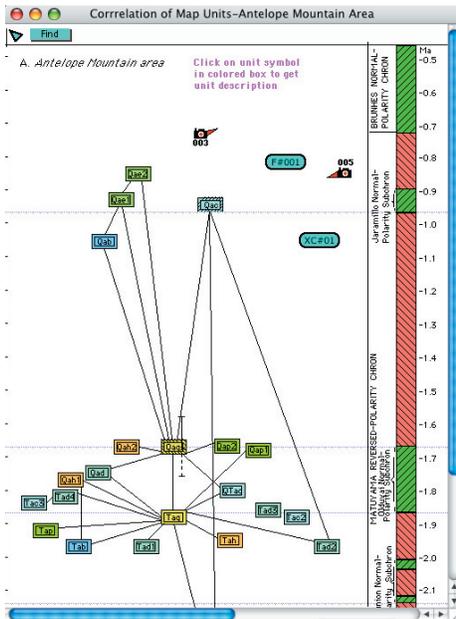
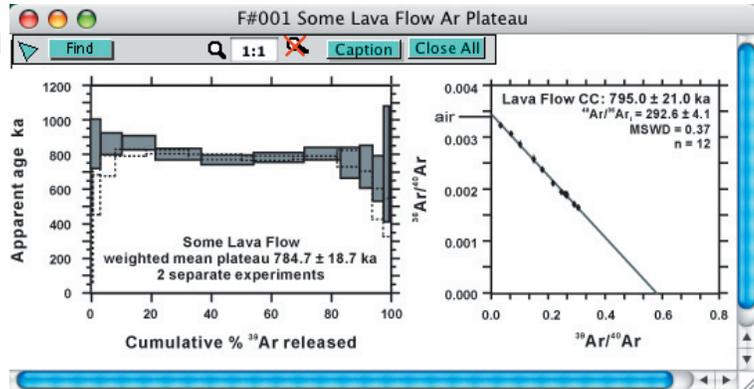


# Steps to Adding Figures, Correlation Charts or Cross-Sections

## General Description

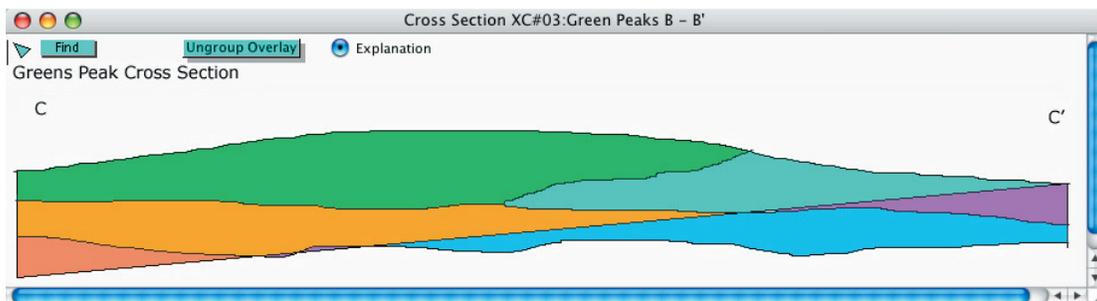
The process of adding figures, correlation charts and cross-sections to the DDM-Template is identical. These steps are described below. Indexes of figures, correlation charts and cross-sections can be accessed from the 'Home Screen'. You can also place links to specific figures, charts or cross-sections on any overlay within your project.

Figures can include charts, tables, diagrams or any other kind of data saved as jpeg files. Files for figures should be stored in the 'figures' folder of the DDM directory. Figures are given a number in the form 'F#001', which allows you to store up to 999 figures. The program allows the user to open up to two figures at the same time. Figures can be accessed from the 'Index of Figures' button on the 'Home Screen', but you can also place links to specific figures on image or map overlays.



Correlation charts are useful to show the relationships between different map units. Files for correlation charts should be stored in the 'comu' folder of your DDM directory. Correlation charts are given a number in the form 'CC#01', which allows you to store up to 99 charts.

Cross-sections show a subsurface view of an area. Files for cross-sections should be stored in the 'crosssec' folder of your DDM directory. Cross-sections are given a number in the form 'XC#01', which allows you to store up to 99 sections.



## Creating Indexes for Figures, Correlation Charts or Cross-Sections

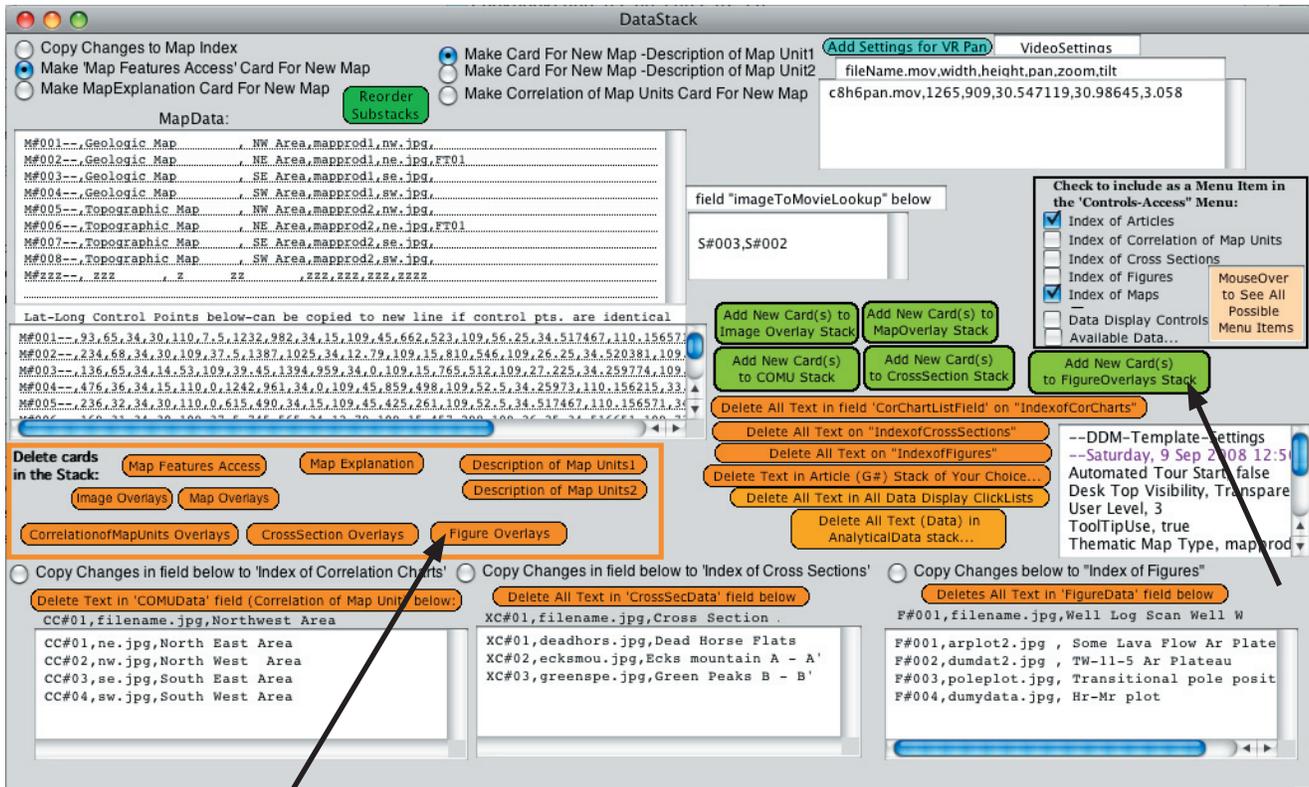
The text for the Indexes is stored in the 'DataStack'.

- 1) Open the 'DataStack' using the button on the 'Open Stacks' tab of the 'Project Modifier'. The text for the 'Index of Correlation Charts' is stored in the field on the lower-left side of the window, the 'Index of Cross Sections' is stored in the center field, and the 'Index of Figures' is stored in the lower-right field.
- 2) Before adding your text, use the orange button above the field to delete all text that is currently in the field.
- 3) Type your data directly into the field, being sure to use a non-proportional font (i.e. Courier, or Courier New on PCs). Type the appropriate 'F#xxx' (or 'CC#xx' or 'XC#xx'), 8-character file name with a 3-character extension, and comments about that figure, correlation chart or cross-section. Keep your columns aligned, and be sure there are no extra lines below the last one containing data. Note also that unlike map and image files, these lists do not need to end with a last line of only "zzz"s.
- 4) Now click on the radio button labeled 'Copy changes below to Index of Figures/Correlation Charts/Cross Sections'.
- 5) Although the file names are not listed in the indexes, they are included in the window title when opened.

The screenshot shows the 'DataStack' application window. At the top, there are radio buttons for 'Copy Changes to Map Index', 'Make Map Features Access' Card For New Map', and 'Make MapExplanation Card For New Map'. A green 'Reorder Substacks' button is visible. The main area contains a list of map data entries (M#001 to M#008) and a 'Lat-Long Control Points' section. Below this, there are three orange buttons for deleting text in the 'Index of Correlation Charts', 'Index of Cross Sections', and 'Index of Figures' fields. A 'Delete cards in the Stack' section lists various map features like 'Map Features Access', 'Map Explanation', and 'Image Overlays'. On the right, there are several green buttons for adding new cards to different stacks (Image Overlay, Map Overlay, COMU, CrossSection, FigureOverlays) and a 'Delete All Text' button for the 'Index of Figures' field. A 'Check to include as a Menu Item in the Controls-Access Menu' section has checkboxes for 'Index of Articles', 'Index of Correlation of Map Units', 'Index of Cross Sections', 'Index of Figures', 'Data Display Controls', and 'Available Data...'. The bottom of the window shows three data fields with their respective radio buttons for copying changes: 'Index of Correlation Charts', 'Index of Cross Sections', and 'Index of Figures'. Each field contains a list of file names and descriptions, such as 'CC#01,filename.jpg,Northwest Area' and 'XC#01,deadhorns.jpg,Dead Horse Flats'.

## Creating Overlays for Correlation Charts, Cross-Sections or Figures

- 1) First, clear the pre-existing overlay cards using buttons on the 'DataStack'. Click on the appropriate button within the orange box labeled 'Delete Cards in the stack:'.
- 2) Now click the appropriate green button toward the right side of the stack labeled, 'Add New Card(s) to Stack'.
- 3) Overlays for correlation charts, cross-sections and figures can be edited in the same way that you edited overlays for images. First, open the window whose overlay you desire to edit and the 'Project Modifier, Modify Overlays' tab. Add objects by dragging them from Revolution's toolbar. Click the orange 'Add new objects to overlay' button to add these objects. If you need to delete objects, click the 'Ungroup Overlay' button, edit the overlay, then click the 'Group Overlay' button. The 'Add new objects to overlay' button is a shortcut to use if you are just adding things. Otherwise the 'Ungroup/Group' process does the same thing. Note that for map and image overlays, you had to use the 'Save new overlay' button. For these overlays, that step is unnecessary, because these overlays are not saved in a separate file.



## Creating Links to Figures

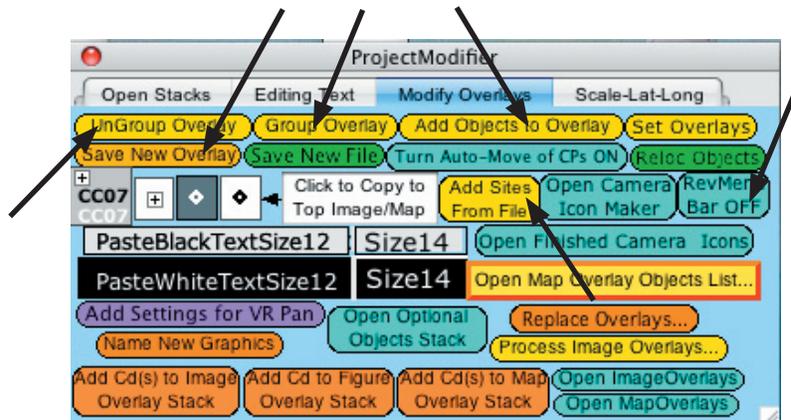
You can place links to figures anywhere in your DDM project. Buttons providing these links are located in the 'Optional Objects' stack (labeled 'F#001'). Use the 'Object Inspector' to rename the button to match the correlation chart that you want to link to. Then, just copy and paste the button with the 'Edit' tool into your project.

# Editing Overlays

## Editing Overlays for Images, Maps, Correlation Charts, Cross-sections and Figures

Overlays for images, maps, correlation charts, cross-sections and figures can be edited using buttons on the 'Project Modifier'. Once you've created your initial overlay, you can now open it and use the built in capabilities of the ddm-template along with Revolution's tools to edit and add vector objects to the overlay. These objects might include text fields (for labels or site numbers), or other vector objects such as arrows or polygons.

- 1) To modify an image or map overlay, select Revolution's browse tool while the 'Dynamic Digital Map Home Screen' is the top window.
- 2) From the 'Dynamic Digital Map Home Screen', option (alt)-click on the 'Preferences and Set Up' button in the upper right corner to open the 'Project Modifier' palette.
- 3) Next, open an image, map, correlation chart, cross-section or figure that you wish to modify. Make this the top window by selecting it in the 'Window' menu. When editing overlays for figures, you must do them in the first of the four figure stacks. For other categories, multiple windows can be open.
- 4) With the image you want to edit open, and in the top window, click on the yellow 'Ungroup Overlay' button, in the 'Modify Overlays' tab of the 'Project Modifier'. Choose "yes" to confirm that you want to ungroup this overlay. *Note: This action removes the scroll bars so you can no longer scroll around the window. If you want to edit something outside the screen, you need to scroll it until it is inside the window before you ungroup the overlay.*
- 5) The objects in the overlay are now editable with Revolution's edit tool. Details about adding



vector objects to overlays are discussed below.

- 6) When you are finished editing the overlay, click the yellow 'Group Overlay' button on the 'Modify Overlays' tab of the 'Project Modifier'. As a shortcut, if you are only adding objects (not changing or deleting), you can do this without ungrouping the overlay. Just use the 'Add Objects to Overlay' button to add the new object; **once added, you can scroll to add new ones as wanted.**
- 7) After modifying overlays for images or maps, you must save the overlay using the 'Save New Overlay' button. This step is not necessary for correlation charts, cross-sections or figures because these overlays are stored on the same card as the image object into which the jpeg image is opened.
- 8) To add labels or sample sites for which you have x,y pixel or latitude-longitude coordinates, be sure they are stored in a **text** file with each on a separate line with the label or site, first, followed by a comma or tab, and then the x (or latitude) and y (or longitude). Then, with the wanted map segment open, click on the 'Add Sites From file' button, and import them. Be sure to 'Add Objects to Overlay' before saving the new overlay.

9) Windows or Linux OS users should toggle the 'RevMenu Bar' button to 'ON' (see arrow on right side of the figure on the previous page) to keep the Revolution Menu palette from disappearing when saving a map or image overlay that scrolls. Macintosh users who don't want to see Revolution Menu Bars Toolbar Text or Toolbar Icons should set this toggle button to "OFF" so those don't reappear when a scrolling image or map overlay is saved.

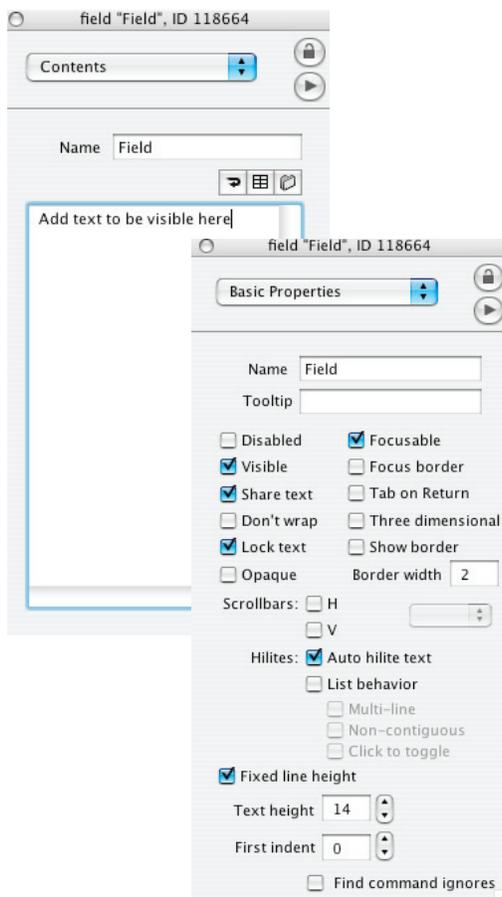


## Adding Vector Objects to the Overlays

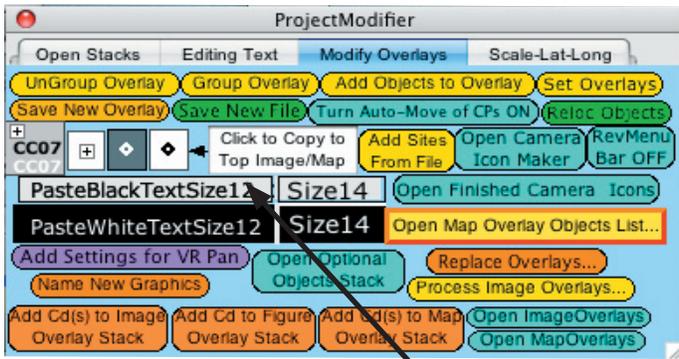
The 'Tools' palette contains text fields, buttons and objects that you can add to your overlay. Just click and drag the objects from the 'Tools' palette onto your overlay. The names of each tool are displayed in Tooltips, made visible by holding the mouse over the tool.

To create a text field using Revolution's 'Tools' palette, click and drag an object from the palette onto your overlay. Double-click in the field to open its 'Object Inspector' palette. Use the Inspector palette's 'Basic Properties' card to set the field's (or any object's) name, or leave it on the default.

The name of the field does not necessarily correspond to the text visible in the field (known as its textData). To change that, you must go to the 'Object Inspector's' 'Contents' tab, and edit the text in the large, lower field. *Note: If you want the DDM to be able to locate this object, which is especially important if it is a unit symbol or sample site, you should set the field's name and textData to the same value.* The easiest way to do that is while the 'Contents' tab is open, select the text in the 'Name' field, and copy and paste it into the text box in the lower part of the card. Alternatively, when you're done labeling all fields (being sure they have no previous names, that is to say, they will have the default name "Field 1", "Field 2", etc. set by Revolution when they are first made), you can use the "Name New Graphics" button in the 'Modify Overlays' tab of the 'Project Modifier' palette to give all (and only) the previously unnamed text fields a name identical to their textData. To add a field with just letters or labels to an overlay, there are several settings you probably want to make sure are selected in the 'Object Inspector's' 'Basic Properties' card. Select the following options: "LockText", "Focusable", "Share Text" and "Visible". You will probably want to uncheck "Focus Border", "Border" and "Opaque", but these are optional.



Alternatively, you can add a text field with preset attributes from the 'Project Modifier' 'Modify Overlays' tab. Click on one of the four fields labeled "PasteBlackTextSize12", "PasteBlackTextSize14",



"PasteWhiteTextSize12" or "PasteWhiteTextSize14" (the left sides of the "Paste...Size14" fields are tucked under the "Paste...Size12" fields to save space on the palette). This will paste the appropriate text onto your new overlay, where you can relocate it and modify its text and name. *Note: It is essential that the new field's "sharedText" property be selected in the 'Object Inspector,' 'Basic Properties' tab. Otherwise when you save it back into the 'Map' or 'Image' 'Overlay' stack, it's text will not be retained.* The text you copy into your overlay from the 'Project Modifier', as described here, has already had the "shared text" property selected (double-click on it to open Revolution's 'Object Inspector' palette to see this). To modify the text once you've pasted it into your image, choose the 'Contents' tab in the field's 'Object Inspector'. Change the field's name in the top field, and enter the text that will be visible in the lower field.

Once you have created a text field, you can copy it to reuse its attributes. To copy fields, hold down the option (alt) key and click and drag your mouse to duplicate the field. Relocate the new field and repeat this to create as many field as you need. When you are finished duplicating and placing fields, double-click one of them to open it's 'Object Inspector' palette, and go to the 'Contents' card. In the lower field on that card, change the text. Then, without closing the 'Properties' palette (or changing it's tab), select the next field you wish to change, and modify the text in it, and continue until all are modified. Once you are finished, you can use the 'Project Modifier's' 'Name New Graphics' button to set the name to correspond to all unnamed fields' textData.

To change a given property for multiple fields at once, you can select numerous fields by holding down the shift key and clicking on them. Then, for example, you can change their color by going to the 'Text-Color' menu and selecting one of the listed colors. For text fields, you can change multiple fields' properties by selecting a field, double-clicking it to open the 'Object Inspector' palette, and then as described above, hold down the shift key and select multiple fields. Then check the boxes of the properties you wish to change in the appropriate cards of the 'Property Inspector' palette.

To add arrows, polygons, and other shapes, you can use the various tools found by opening the 'Draw & Paint Controls' from the triangle on the bottom of Revolution's 'Tools' palette. An arrow can be formed by drawing a line, and adding an arrow head to the beginning or end of the line using the 'Object Inspector,' 'Basic Properties' tab. A polygon can be added by clicking and dragging the polygon tool where you want it to appear.

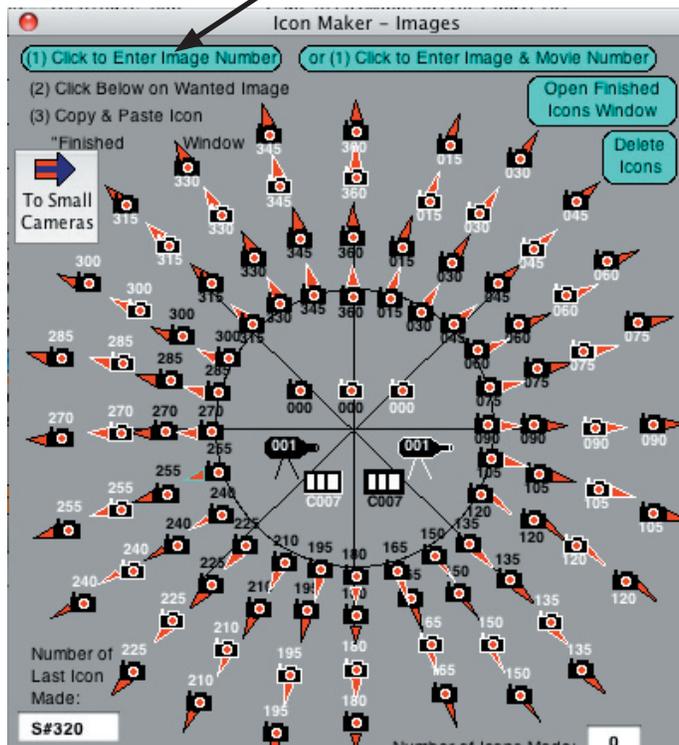
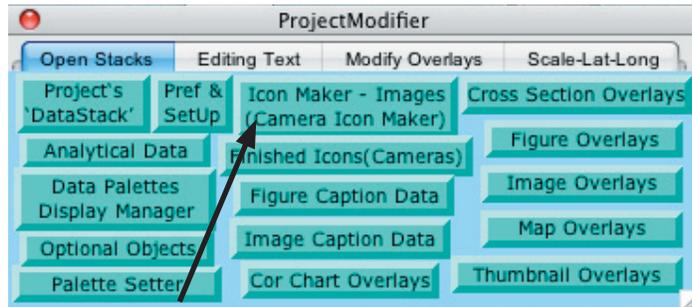


When finished editing, follow the steps in the previous section to save the overlay, and then save the project using the instructions in the 'Introduction'.

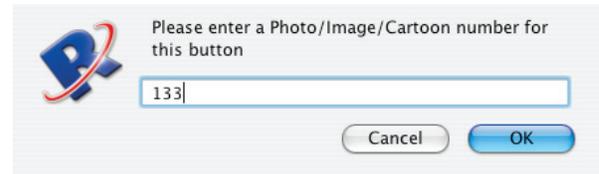
## Adding Camera Icons to Map or Image Overlays

Camera icons provide links to images. To add camera icons, they must be created in the 'Icon-Maker'. The process is the same for both image and map overlays.

- 1) Open the image or map to which you wish to add camera icons.
- 2) Open the 'Project Modifier', 'Open Stacks' tab.
- 3) Click on the button entitled 'Icon Maker - Images (Camera Icon Maker)'.
- 4) After deciding where to put your icon on the map or image, determine the

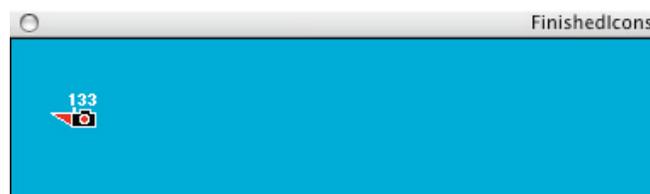


number 'S#' of the image to which you want the camera icon to link (the 'S#' is listed in the 'Index of Images'). Click on the turquoise button found in the upper left of the 'Icon Maker - Images' palette, which is labeled "(1) Click Here to Enter Image Number".

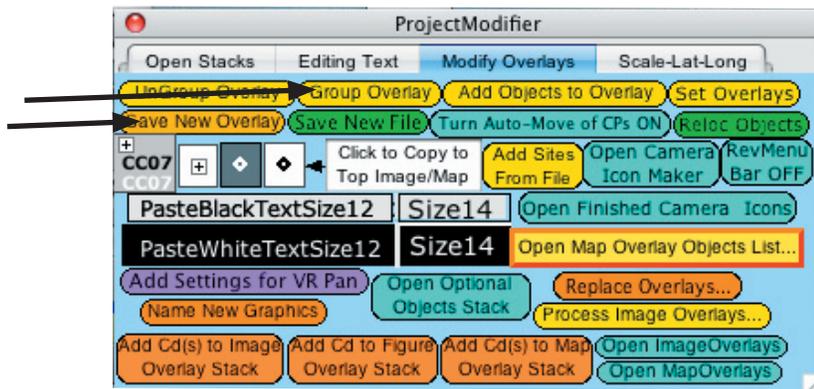


5) Enter the only number you want the icon to have. If you enter less than three digits, the program will pad the number with preceding zeros (for example, "7" will change to "007").

6) Next, select the directional arrow that points in the direction the image was taken, or choose a camera icon without a directional arrow from the center of the palette. The numbers you see on the cameras of the 'Icon Maker - Images' palette are just the compass directions in which they point.



- 7) Open the 'Finished Icons' stack by clicking on the turquoise button labeled 'Open Finished Icons' window (third button down, in the upper left of the 'Icon Maker - Images' palette).
- 8) To be able to copy it you need to use Revolution's Edit (pointer) tool, found in the upper-right corner of the 'Tools' palette.
- 9) Next select the icon(s) you want to copy by clicking on them or dragging a box around them, and copy them using a "cmd-c" ("control-c"). *Note: If you can't select the whole camera icon (that is, when you click on it, only a part of it is selected) you may have to use the menu option "Edit-Selected Grouped Controls" to toggle the Edit (pointer) tool to select groups, instead of parts of them.*
- 10) Bring the stack into which you want to paste the icon(s) to the front, and ungroup that stack's overlay so that you can paste in your icon. Use the 'Ungroup Overlay' button in the 'Modify Overlays' tab of the 'Project Modifier' to do this. Now, use the menu 'Edit-Paste' or "cmd-v"("control-v") to paste. The icon will be placed in the same orientation as it was in the 'Finished Icon' window. (As a shortcut, just paste the icon onto the window and click the 'Add Objects to Overlay' button, instead of the 'Ungroup/Group Overlay' combination.)
- 11) Again using the edit tool, click on and move icons around to position them, and delete unwanted icons with the delete key.
- 12) To save these new icons, (and all labels and vector graphics) into the project, click the 'Group Overlays' button. For map and image overlays only, also click the 'Save New Overlay'

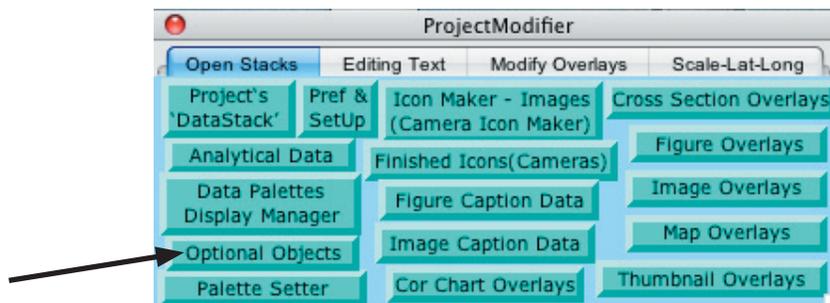


button. It is not necessary to click the 'Save New Overlays' button for figures, cross-sections or correlation charts.

- 13) The program will group these new icons together, along with all previous parts of the overlay, and save it back into the project. It will then close the map window, and re-open it for you to test the results. Don't forget to save the whole DDM periodically so that you do not lose your work.

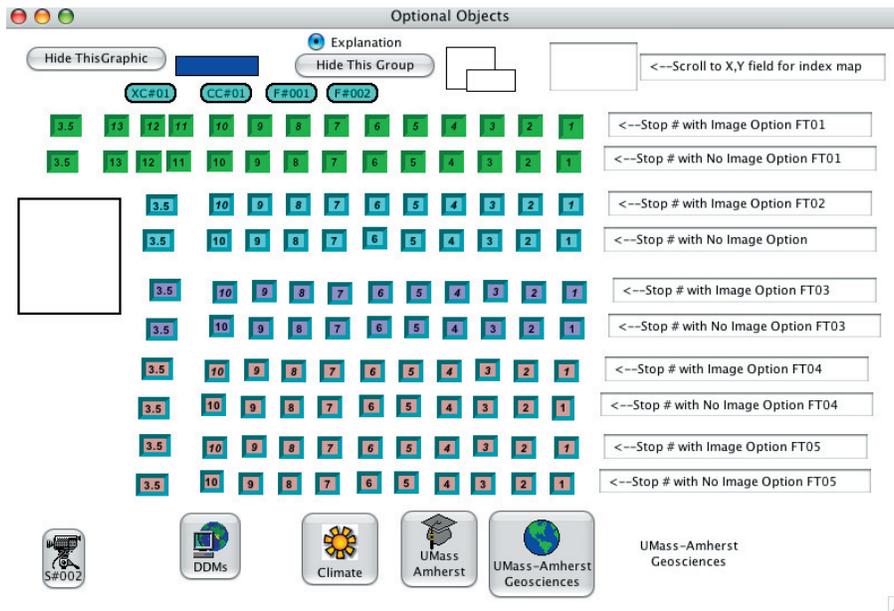
## Optional Objects for Overlays

The 'Optional Object' stack contains buttons that you can add to image, map, figure, cross-section and correlation chart overlays. These buttons include field trip stop icons, web-linked icons and links to other media within the DDM project. To access this stack, click on the



button 'Optional Objects' on the 'Project Modifier's' 'Open Stacks' tab.

Buttons can be copied and pasted into overlays using Revolution's edit tool. Field Trip 01 icons are on the top rows in green; icons for additional field trips are found below in blue,



purple and tan. Note that the icons are named FT01 - Stop01 (not just "Stop 1"), to distinguish between two separate field trips. You can create additional field trips and their icons by copying the existing icons, renaming them, (for example FT01-Stop01 would become FT03-Stop03) and changing their color. The top row icons also contain a link to a particular image, so you can change this for additional field trips as well. Select the icon, use command-e (control-e for PCs) and on the fifth line of the script, insert the proper S# for your image, replacing 'S#001'. Note that all linked text describing a site should be referred to as Stop01, Stop02, etc. The program knows which field trip number the guide is (for example FT01) and will add that prefix when it searches for the icon on a map or image. Insert field trip icons onto your overlays as you did with camera icons.

```
Script Editor - field "FT03-Stop02" of card id 1002 of stack "OptionalObj
on mouseUp
  put the short name of me into guideAndStop
  wait 20 ticks
  if the mouseclick and within (the target, the clickloc) then
    global GlobPhotoToGet
    put "S#001" into GlobPhotoToGet
    globName
    global globStringToFind
    send "openGuide guideAndStop" to cd 1 of stack "Map"
    exit mouseUp
  end if
  global globStringToFind
  send "openGuide guideAndStop" to cd 1 of stack "Map"
  --openGuide guideAndStop # script in Map Stack's Card script
  # gets correct Guide stack in script of Map_Data stack's data field
end mouseUp

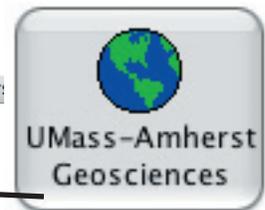
on mouseEnter
  set the itemDel to quote
  put item 2 of the script of me into thisImage
  set the itemDel to ","
  put the short name of me into myShortName
  put the long name of me into myLongName
  fixToolTipFT myShortName,myLongName,thisImage
end mouseEnter
```

The icons found at the bottom of the 'Optional Objects' stack provide links to web pages. To assign these links, open the script of the icon and replace the web address. The tooltips for these icons use the text entered in the

Script Editor - button "UMass-Amherst Geosciences" of card id 1002 of stack "OptionalObjects" of stack "/User:

```
on mouseUp
  put "http://www.geo.umass.edu" into thisURL
  revGoURL thisURL
end mouseUp

on mouseEnter
  put the short name of me into myShortName
  set the tooltip of me to "Click to Open a Link to " & quote & myShortName & quote & " in Your Default Web Browser."
end mouseEnter
```



# Adding Text and Captions to the Template

## Introduction

Text can be inserted into your DDM project as articles or captions for images and figures. Image captions and figure captions can be accessed from a button on the image/figure window. Article text is displayed as its own window, and can be opened from the 'Index of Articles'. Articles are named with "G#", followed by a number, for example "G#001". The processes for adding captions and articles are discussed below.

## Adding Image or Figure Caption Text

Image caption text is displayed in the palette labeled 'Image Window Caption' (but named 'ImageStackCaption'). This caption is opened when the user selects the button 'Caption' in the stack labeled 'Image Windows Control Palette' (but named 'ImageStackControlPalette'), which automatically accompanies the image when opened. Figure captions can be opened from the 'Caption' button on the figure window. The actual text for captions is stored in fields in stacks called 'ImageCaptionData' or 'FigureCaptionData', and copied by the program into the palette for display. In order to copy this text, the program looks for the caption text to be stored in a systematic format that corresponds to the field parameters.

The caption text formats are:

- a) Each caption must be stored as one logical line of text. A logical line of text ends with a carriage return, the same symbol you use to end a paragraph. For example, this paragraph, starting with "a" and at the end being followed by a carriage return is considered a single logical line.
- b) Each caption line starts with the file name of the image that the caption is associated with. The extension (either ".jpg" or ".mov") is followed directly by two dashes.
- c) The caption itself directly follows the two dashes. If you want to stick to a format common in geologic literature, begin with a phrase that describes the photo or figure, and continue as in the following example of a caption for an image:

chardpond.jpg--Chard Pond looking north. The little green frog on the lily pad in the pond is keeping a wary eye on the cute little furry otter in the background.

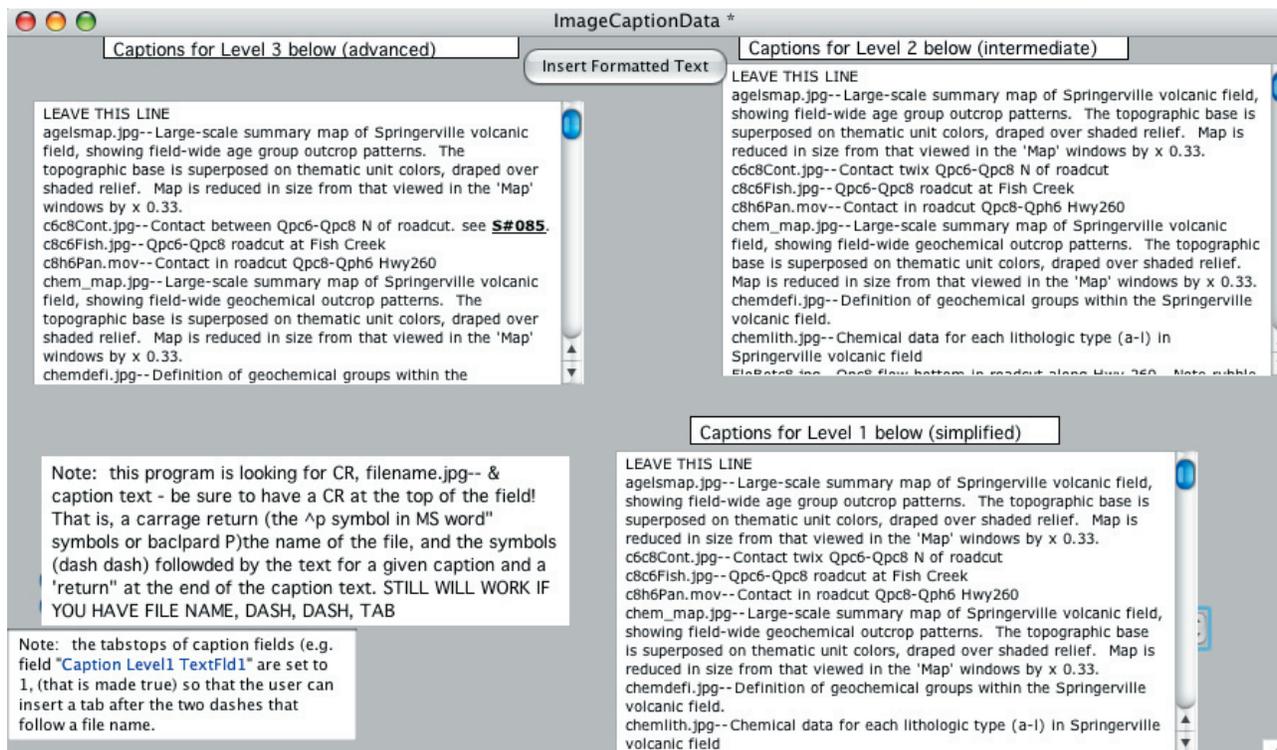
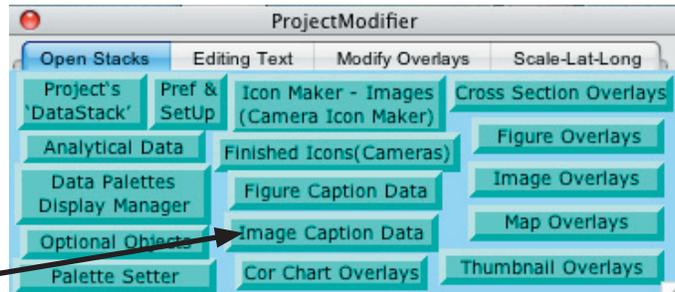
Image and figure caption text can either be added directly into the display field, or to the 'ImageCaptionData' or 'FigureCaptionData' stack, where all caption text is stored. Both of these processes are described below. The following instructions will refer to image captions, but the process is identical for figures unless otherwise noted.

## Adding Multiple Captions through the 'Image/ FigureCaptionData' Stack

One option is to add or edit text in the 'ImageCaptionData' stack:

- 1) Open the 'Project Modifier' palette, by option-clicking the 'Preferences and Set Up' button in the upper right corner of the 'Home Screen'.
- 2) Open the 'ImageCaptionData' stack from its button on the 'Open Stacks' tab of the 'Project Modifier'.
- 3) On the card in this stack, there are three text fields.

The top-left field contains text for Level 3 caption material; the top-right field contains Level 2 material; and the lower field contains Level 1 material. The three levels give the user the option to display caption text at various levels of sophistication (or in three different languages): level 3 is the most advanced or detailed, and Level 1 is the least.



For example, we aim Level 1 text at middle-school level readers. The level displayed by the program is set in the 'Preferences and Set Up' palette. If you wish to add or edit new text you can insert the new text or modified text directly in these text fields using the Revolution interface. Simply copy the text from your Word document, and paste it into the corresponding field. If no text is in the caption storage field, skip to step (4e) below.

- 4) To add text directly into those fields in which there are existing captions, follow steps (4a) to (4e) below. These tell you how to cut all text in the text field, paste it into a word processor document, check it, add the new captions, and then copy it back into the text field.
  - (4a) To copy the text, use Revolution's Run (browse) tool, and click into the caption storage field.
  - (4b) Select all the text in the field by using the command-a keys (control-a keys for PCs) and

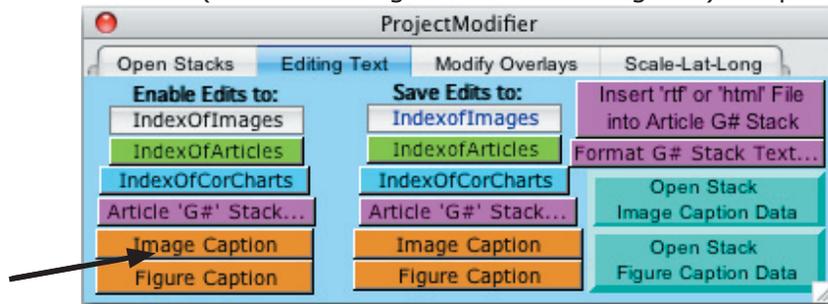
- then cut the selected text using the command-x keys (control-x keys for PCs).
- (4c) Paste your text into a word processor. Then run a sort on the document to sort all captions by their file name. Make sure all your files have captions, and that you are not deleting or duplicating captions.
  - (4d) Add your new captions according to the format discussed in the previous section.
  - (4e) Copy the caption text in your word processor to the clipboard, then paste it into the caption storage field, using the command-v (control-v for PCs) keys.

Adding caption text using the cut and paste method does not always preserve formatted text, such as sub- or superscripts. To guarantee that your formatted text is transferred into your captions accurately, use the 'Insert Formatted Text' button, located in the upper-center of the 'Image Caption Data' window. This option allows you to insert either an rtf or html file into the Level 1, 2 or 3 windows of the 'Image Caption Data' window.

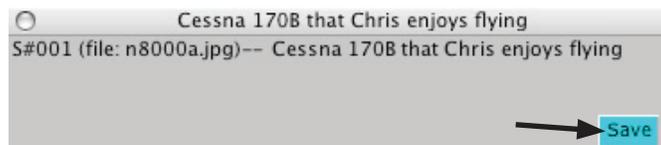
## Adding or Editing Captions From Within the 'Image/Figure Window Caption' Palette

You can edit a caption that is being displayed in 'Image Window Caption' palette while the image is open. To do this:

- 1) Open the image whose caption you wish to edit, and use the 'Caption' button in the 'Image Windows Control Palette' (or from the figure window for figures) to open it's caption.



- 2) Open the 'Project Modifier' palette, by clicking the 'Project Modifier' button in the upper-right corner of the 'Home Screen' stack.
- 3) In the 'Editing Text' tab, click on the orange 'Image Caption' button under the heading 'Enable Edits to:'.  
This will allow you to alter text in the 'Image Window Caption' palette. If you want to see the changes, open the 'ImageCaptionData' from the button on the bottom-right of the 'Editing Text' tab of the 'Project Modifier'.
- 4) You'll see a turquoise 'Save' button displayed in the 'Image Window Caption' palette. After you've edited the text in this palette, click on it and respond to the prompts to save the new

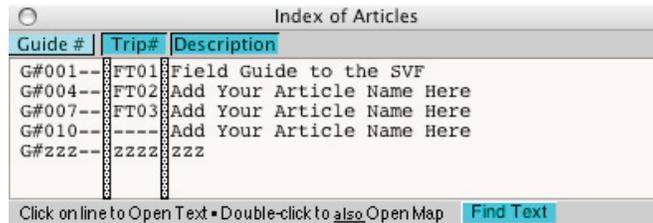


or modified caption.

- 5) *Note: Saving captions this way will only save the caption into the caption field for the user level that your preferences presently show. To change the text for other user levels use the techniques discussed in the section above in the 'Image Caption Data' stack, or use the 'Preferences and Set Up' palette to select and alter text at a different user level.*

## Adding Article Text to the DDM-Template

General text, such as guidebook articles or map descriptions, is added in stacks named "G#001" to G#012".



Guide #	Trip#	Description
G#001--	FT01	Field Guide to the SVF
G#004--	FT02	Add Your Article Name Here
G#007--	FT03	Add Your Article Name Here
G#010--	----	Add Your Article Name Here
G#zzz--	zzzz	zzz

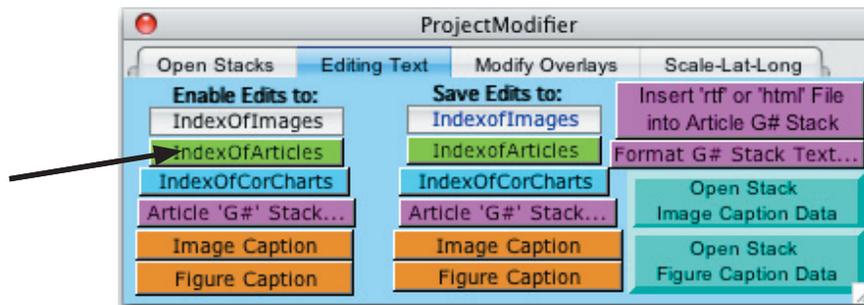
The DDM-Template uses the convention of allowing text to be stored for three different user levels for any one article, ranging from "For users without much science background" to those with a "Basic Geoscience" background. Alternatively, one could include text in three different languages. Users can select the appropriate level from the 'Preferences and Set Up' palette, using the 'Controls-Access' menu to open this palette. In order to set up this "multi-level" user system, any one given text article is stored in three successively numbered stacks. For example, a guidebook article for the Deerfield Basin Field Trip may be stored in stacks "G#001", "G#002" and "G#003". The text that expresses this to those with a "Geoscience Background", using language with the most advanced level of terminology, would be stored in a field on the stack "G#001". The same field trip might be discussed in more general terminology in a field on the stack "G#002". Likewise, the most carefully worded and selected vocabulary, using the least sophisticated terminology would be stored in stack "G#003". These will be automatically selected and displayed when the user changes the "User Level". If only a single level of text is included, the three "user-level" buttons should be moved out of the visible part of the stack (don't delete them, because they are needed by the program) or alternatively, (a) insert the same text into all three windows that apply to that text, or (b) disable the selection buttons for unused levels in the preferences card (open Revolution's 'Object Inspector' for each button, and check the "disable" button checkbox).

The Template provides stacks "G#001" to "G#012" to accommodate up to four articles. Additional articles could be added, if wanted, beyond those included in the template (which includes stacks for four articles) by cloning the last "article" stack included (G#013).

## To Add an Article to the List in the 'Index of Articles'

This procedure is similar to adding a line for a new image to the list in the 'Index of Images'. First decide which "G#" stacks you wish to insert your article's text into, and then:

- 1) Open the 'Project Modifier' palette and the 'Index of Articles'.
- 2) To enable editing of the text field in the list, go to the 'Editing Text' tab of the 'Project Modifier' and click the 'Index of Articles' button under the 'Enable Edits to:' heading.



- 3) Use the Run (browse) tool to click in the field and edit the text. Remember not to include extra commas beyond those that divide the columns, and no "&" or "%" characters.

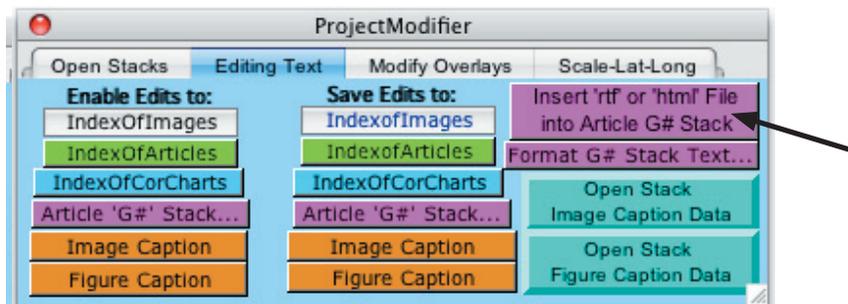
- When finished, either click the red warning sign on the top of the 'Index of Articles' palette, or the 'Index of Articles' button under the 'Save Edits to:' heading in the 'Project Modifier'.

## To Change the Title of your "G#xxx" Stack

The DDM program automatically changes the title of any "G#" stack to match the words found in the "Description" column of the 'Index of Articles' stack, when the "G#" stack is opened for the first time. Follow the directions in the next section to edit the description. Remember that the "G#" stack is a fairly small floating palette, so keep your title to about 30 characters in length.

## To Import Article Text into a "G#xxx" Stack

- Save the text document from your word processor program as either a "Rich Text file" ("rtf") or an "html" format. **I recommend using the 'html' option because it retains the most format.**
- From the 'Project Modifier', 'Editing Text' tab, click the "Insert rtf or html" button on the right side of the palette.



- Choose the option that matches the type of text you wish to import, then find and select the appropriate file.
- Enter the "G#" for the article stack that is the destination of your text. Enter the entire stack name, for example "G#001" (without the quotes).
- The text should now be inserted into the main scrolling field (named "TextField") in that stack, ready for you to further edit or format it. *Note: This will overwrite any text previously there!*

## A Note About Text Formatting

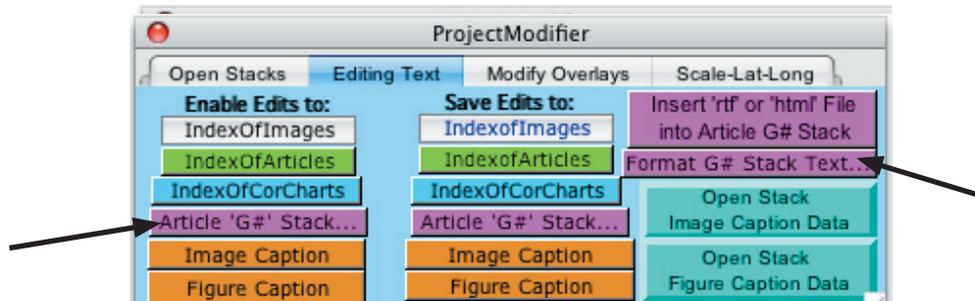
Even with the capability to import either "rtf" or "html" formatted files, as of November 2003, the text management in Revolution fields does not support the following capabilities:

- Different alignments for different paragraphs
- Different margins for different paragraphs
- Different indents for different paragraphs
- Different tab stops for different paragraphs
- Different kinds of tab stops (left, center, right, decimal)
- Spaces before or after a paragraph
- Widow/orphan control

Thus, even if text appears formatted in any of the above ways in your "rtf" or "html" formatted document, it won't be, once it is imported into a Revolution field.

## To Edit Article Text

You can edit your article text after it is inserted into the "G#" stack by using buttons on the 'Project Modifier' stack to enable this text field for editing, and to restore it to the settings needed for use. To do this, click on the purple "Article 'G#' Stack..." button under the heading 'Enable Edits to:', found on the 'Editing Text' tab of the 'Project Modifier'.



In the pop-up dialog box enter the "G#" of the stack you want to edit, and the program will open it for editing. When you're done, click on the purple "Article 'G#' Stack..." button under the 'Save Edits to' heading. This will set the field and stack back to a state ready for use.

## Setting Links in Article Text

To manually link text, hilite the text in the article field and select the "Link" option from the "Text" menu. This underlines the wanted text, and groups it if it is more than one word. **To automatically link all occurrences of words starting with DDM specific characters**, including, for example S#001, M#001, G#001, CC#01, F#002, XC#01, Stop01, www.ddm.geo.umass.edu/ or http:// etc., click on the purple "Format G# Stack Text..." button on right side of the the Project Modifier stack's "Editing Text" tab (see arrow on right side, above). When asked, enter the G# for the stack in which you want links to be automatically made. It is a good practice to read through and check that the program correctly made all links and groups the traquilling numbers with the leading letters and/or # signs. *The convention in using links in this text field is that if you are viewing a map, and you single click on the text with the name of a photo icon (for example "S#003"), the program will open the photo. This also works for figure, correlation chart and cross-section numbers, as in the above list of examples. If you use the option-click (alt-click for PCs) the program will center the map and blink the appropriate icon.* A reminder: to enable the use of these, you must link the text of "Stop" the next two numbers, likewise with the "S#" and it's trailing associated three digits. For example, if you click on the S# or the 001 in unlinked text "S#001", it will result in the selection of either "S#" or the three digit number. Thus the need to connect the "S#" with the numbers to make it all one word, as in "S#001". If links include unwanted adjacent charcters, simply hilite them and select "Plain" in the "Text-Font" menu.

## Adding Field Trip Stop Sites

You might want to enable the reader to locate a field trip stop site on your map (by option-clicking on the stop number). In this case you must refer to the stop number using the text Stop01, Stop02, etc. instead of Stop 1, Stop 2, etc. These need not be linked because Revolution can recognize them as complete words if the numbers are attached to the word. Also, single-digit stop numbers must be preceded by a zero, ie. 'Stop01'. The program knows which field trip number a given guide has been assigned in the 'Index of Articles' (for example, FT01), so you don't need to add that to the text describing the stop.

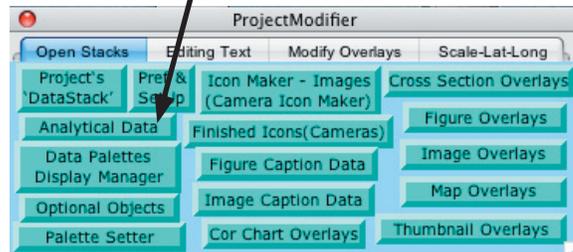
# Adding Analytical Data, Unit Descriptions and Data Lists

## Description of Data Storage Fields and Display Palettes

Your DDM can store and display different types of data associated with rock units, stations, sample sites, etc. Data is called up for display when the user clicks on the unit, station or sample label (an object) that exists on your map or image overlay. In order for the program to find the data for that object, the object's 'Name' must match its 'Contents'. You can verify this in the 'Object Inspector'. When the user clicks on the label placed on an overlay, the program searches for the 'Name' in the fields where you have stored different types of data. If the program sees the 'Name' in a particular data field, it will retrieve and display that data type for that sample. In the 'Data Display Controls Palette', you can activate or deactivate the display of different data types (ie. geochemical, unit descriptions, or paleomagnetic data).

From the 'Data Display Controls Palette', you can also open lists of the samples that have an entry for a certain data type. For example, clicking the 'List' box below the 'Type3Data' heading will open a list of samples that have this kind of data. The user can click on sample names in this list to open their data.

Data is stored in the 'Analytical Data' stack. The 'Analytical Data' stack can be opened from the 'Open Stacks' tab of the 'Project Modifier'. There are twelve data fields in the 'Analytical Data' stack that are named 'Type1Data', 'Type2Data', and so on, which can each hold a different data type (ie. geochemical, unit descriptions, or paleomagnetic data). Fields are programmed to display data in one of three different ways, so the field in which you place certain data sets will be determined by how that data would best be displayed. Data can be displayed in palettes as:



1. Multiple lines of descriptive data that all refer to a single unit/sample/site. For example, this could contain a list of the characteristics, age, phenocryst size, samples, and neighboring units.
2. A table of numeric data, with headings listed horizontally.
3. A table of numeric data, with headings listed vertically.

There are two alternative display options associated with the fields 'Type1Data' and 'Type5Data'. These options and the general characteristics of each data field are described below.

**Type1Data:** This field displays its data as multiple lines of descriptive data that refer to a single unit/sample/site. This field can handle up to eight logical lines of data (a logical line starts after a 'return' and ends with a 'return'). The first line must be in the following form:

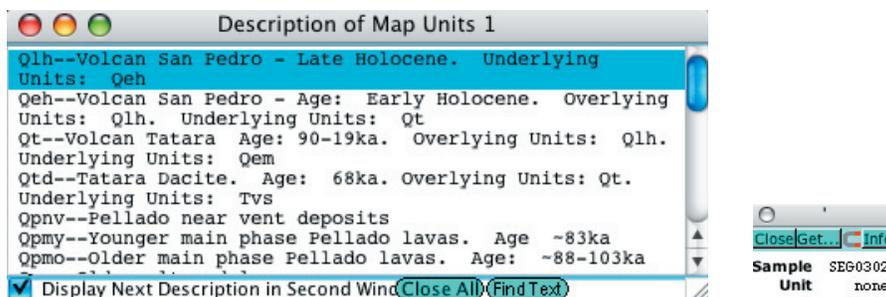
UNIT: Qab-- Flow and cinders....

This is : UNIT(colon)(space)Qab(dash)(dash)(tab)Text

Lines 5,6,7 and 8 can include 'clickable' items, such as other unit names or sample sites. These names should be written in bold, and when clicked on will open data associated with that unit/sample name.

Line 5 opens data from the 'Type2Data' field, lines 6 and 7 open other data from the 'Type1Data' field, and line 8 opens data from the 'Type3Data' field. A single entry in the 'Type1Data' field ends with a blank line. The user can have six windows of 'Type1Data' open at the same time.

The 'Type1Data' field has an alternative display option called 'Description of Map Units'. When you go to upload data into this field, you will get to choose whether the data goes into the 'Type1Data' field or the 'Description of Map Units' field. The 'Description of Map Units' option displays text data as a series of paragraphs with no other formatting. Clicking on the each paragraph entry will locate that entry (object) on your map overlay. Two of these palettes can be displayed at once so that the user can compare different entries.



**Type2Data and Type3Data:** The fields named 'Type2Data' and 'Type3Data' are programmed to display data in vertical palettes, with owhedings along the left. These fields are best from displaying numerical data.

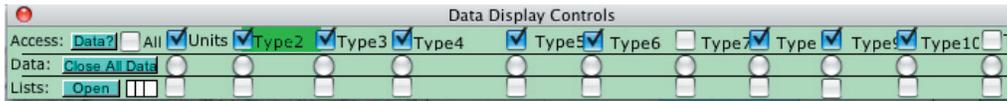
Site	Unit	Loc	Pol No.	Inc	Dec	$\alpha-95$	k
1NM	Qsc5	0222	NM	6/7	61.9	339.8	7.6
4R	QTsf	0221	R	6/8	-42.7	202.4	8.3
8NM	Qsb1	9213	NM	7/7	14.6	72.1	13.3

**Type4Data through Type12Data:** These fields are programmed to display numerical tables of data horizontally, with column headings along the top.

**Type5Data:** The 'Type5Data' field is a horizontal table, but like 'Type1Data', it has an alternative display options. When loading data into this field, you can choose to display it as a horizontal table, or a 'Scrolling List'. The scrolling list can contain lines of descriptive data, including text, whereas the horizontal table display option is best from numerical data. Use this field for descriptions of rock units or sedimentary features, for example. Two of these palettes can be displayed at once so that the user can compare different entries.

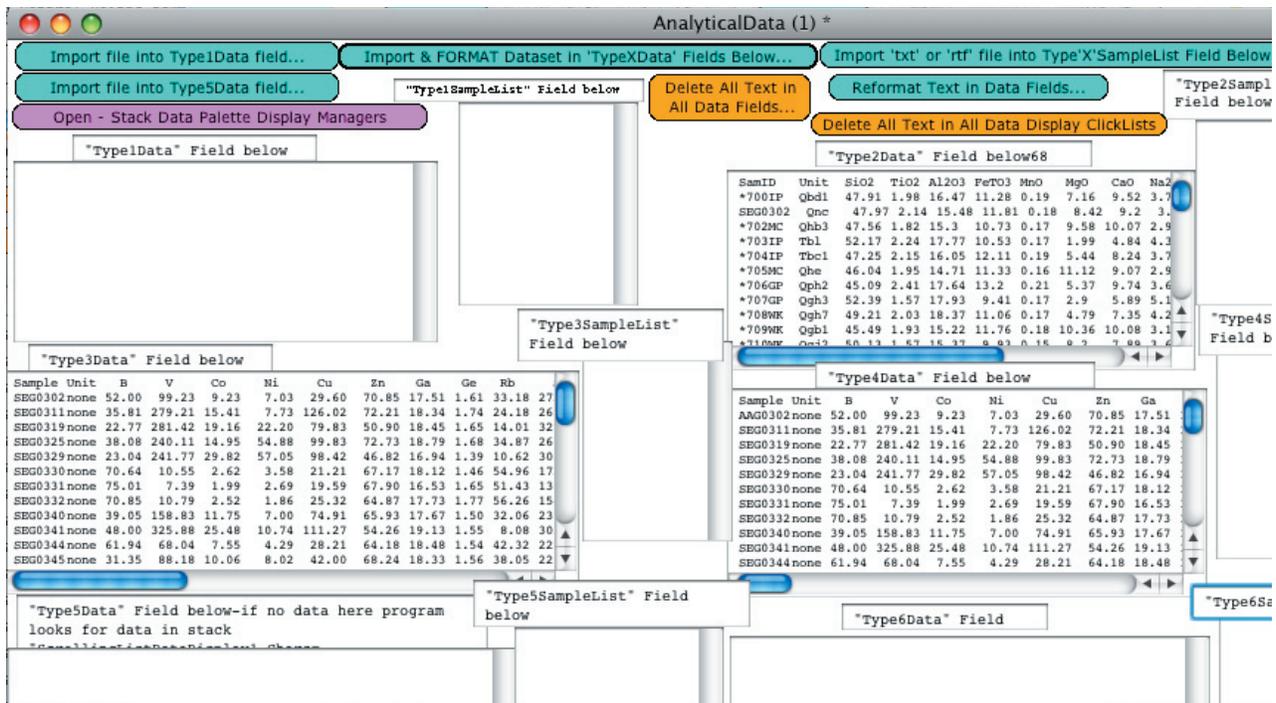
Sample	Unit	Date	Citation
705MC'	Qhe	0.50±0.03*	Cooper and others, 1990. Comment: --- Analytical data: sample wt.=5.0460 gm; K=1.282%, 1.246%; 40Ar*=0.90 x 10 <sup>-12</sup> mol/gm; 40Ar*=4.13% (whole rock).
706GP'	Qph2	1.27±0.07*	Cooper and others, 1990. Comment: Underlies unit Qpc8 (712GP, 1.30±0.04 Ma); suggests age > 1.26 Ma. Analytical data: sample wt.=5.1905 gm; K=1.096%, 1.244%; 40Ar*=2.04 x 10 <sup>-12</sup> mol/gm; 40Ar*=3.30% (whole rock).
708WK'	Qgh7	0.76±0.02*	Cooper and others, 1990. Comment: Normal magnetic polarity of flow (two sites) suggests age <0.73 Ma. Analytical data: sample wt.=5.1905 gm; K=1.096%, 1.244%; 40Ar*=2.04 x 10 <sup>-12</sup> mol/gm; 40Ar*=3.30% (whole rock).

Requesting analytical data (by clicking on a sample site on a map or image, or on a sample in a list) opens the 'Data Display Controls' palette in the upper right side of the screen. The 'Data Display Controls' palette contains three rows of buttons for each type of data (1 to 12). The top and bottom buttons are checkboxes. Checking the top box for a given data type sets the program to display that data when it is requested. Clicking on the middle button closes all display palettes for that data type. A check on the bottom checkbox will display a 'ClickList', or scrolling list, of all samples for that data type. It generates this list on the fly, each time it is opened, by compiling and formatting a list of the first two items or columns of data found in its respective data field.



## Adding Data

To add data to the 'AnalyticalData' stack, open the 'Project Modifier' to the 'Open Stacks' tab. Open the 'AnalyticalData' stack where most of your data will be stored. If there is any data in these fields, you should first empty them by clicking on the orange 'Delete All Text in All Data Fields...' and 'Delete All Text in All Data Display ClickLists' buttons.



You will want to add data sequentially, starting with the 'Type1Data' field and ending with the 'Type12Data' field (resize the 'AnalyticalData' stack to view all fields). Note that if you are not using a type of data (for example, 'Type1Data', unit descriptions or 'Type2Data' data), simply put no data in that field. The program contains code to skip to, and use, the next type of data display palette, if no data has been put in a given field. However, because of the buttons on the 'Data Display Controls' palette, I recommend you fill the fields sequentially so that they are easier to place on the 'Data Display Controls' palette. You will want to drag unused data type buttons out of the view of the user, but not remove them.



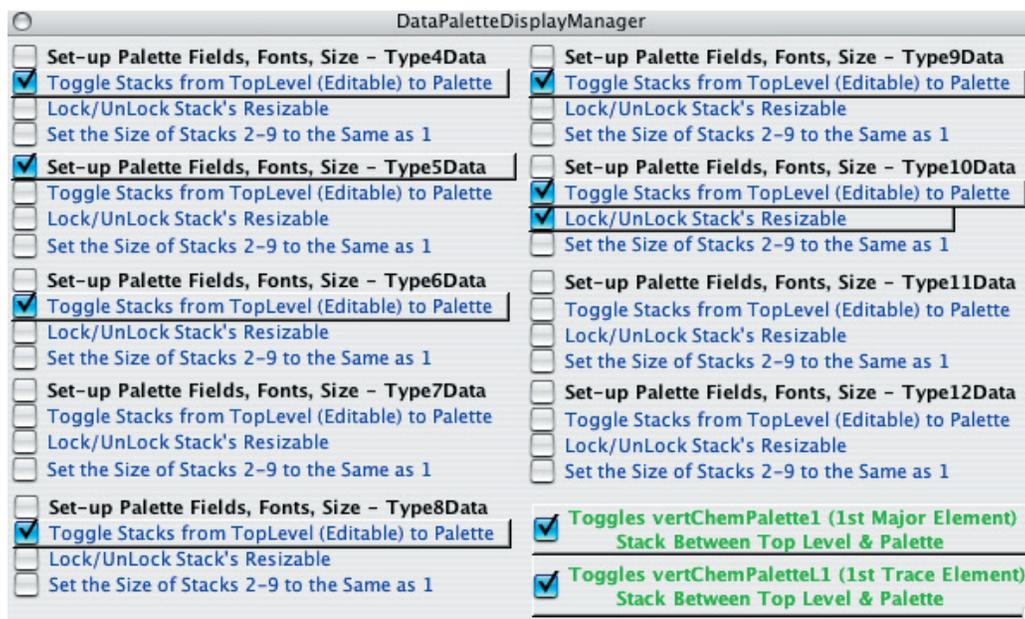
## Creating ClickLists of Data

Buttons found in the 'Data Display Controls' palette create a 'ClickList' that will display the data found in the first two columns of each line you have in a given field (for example, the sample number and the unit name). I include the first two columns because most samples on maps need to be associated with a map unit, and the 'ClickList' provides the capability to sort the list by unit (in the second column), so you can see all samples associated with that unit. If you wish to simply include a list of the samples, or wish to include a list that differs from the automatically generated sample list, you may do that by putting your preferred list into the field just to the right of each 'TypeXData' field on the 'AnalyticalData' stack, labeled 'TypeXSampleList'. Create your preferred list, save it in a text format, and import it, using the button labeled "Import 'txt' or 'rtf' Type'X'SampleList Field below...", found at the top right of the 'AnalyticalData' stack. Follow the prompts to select the field into which you wish to place the data, and then to select the data file you wish to import. When the program sees data in that field, it will load it into the 'ClickList' for those samples, instead of creating its own list.

## Modifying the Data Header or Column Labels

Each group of nine horizontal data-type palettes loads its first analysis into a palette that includes a 'header' that defines what is found in each column. The program sets up this header using controls found in the 'DataPaletteDisplayManager' stack, which can be opened using the violet button on the left side of the 'AnalyticalData' stack.

Open that stack, and after you have entered the data of a given type, click on the 'Set-up Palette Fields, Fonts, Size - TypeXData' button, where 'X' refers to the number of the data (for example Type3Data). You'll notice that all nine palettes open with the same data, because

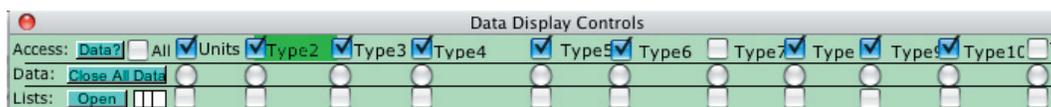


the program must resize each palette and it's field to fit this new data set. The first line of data in the 'AnalyticalData' stack's 'TypeXData' field should be the column headings for data. This first line is placed in the 'DataHeader' field of the top 'horizontal display' palette for each type of data. The headers for each column are spaced by the program with tabs and are located directly over that column of data (represented by your first line of actual data, or the second line in the 'TypeXData' field). In some cases this may not result in a correctly formatted header, especially if a header is long. You can edit that by clicking on the appropriate 'Toggle Stacks from TopLevel to Palette' button and double-clicking on the 'DataHeader' field to open its 'Object Inspector' in Revolution. Either unlock the text (by de-selecting that button) in the Inspector's 'Basic Properties' tab, and edit the field directly with the Edit tool, or edit it in the 'Contents'

tab. If needed, you could add fields above the existing 'DataHeader' field to further define each column of data. Be sure to lock the text of all fields edited or added. If you need to resize the 'DataHeader' field, 'Analysis' field or the entire palette, you can also do that with the other two buttons appropriately labeled for that job. If you need to resize the analysis field or palette, resize the first palette only, and then use the 'Set the Size of Stacks 2-9 to the same as 1' button for the given type-data. Be sure to lock the resizable option of each type-group of stacks by using the 'Lock/Unlock Stack's Resizable' button as needed and return the stacks to palettes by using the 'Toggle Stacks from TopLevel to Palette' button.

## Editing and Placing the 'Data Display Controls' Palette's Buttons

The next-to-last job we need to do in adding analytical data is to relocate buttons and modify the content of their associated text field to reflect the type of data they refer to. Change the 'Data Display Controls' palette to a 'TopLevel' stack by using the buttons in the 'Palette Setter' stack (as discussed in the last section of Chapter 1, 'Palette vs. TopLevel'). When in development mode, this stack should be resizable; you should click on the lower right size and resize the stack so you can see all the buttons you need, and open up space to drag away the ones you won't be using. NEVER delete a button or field on this stack. Drag the

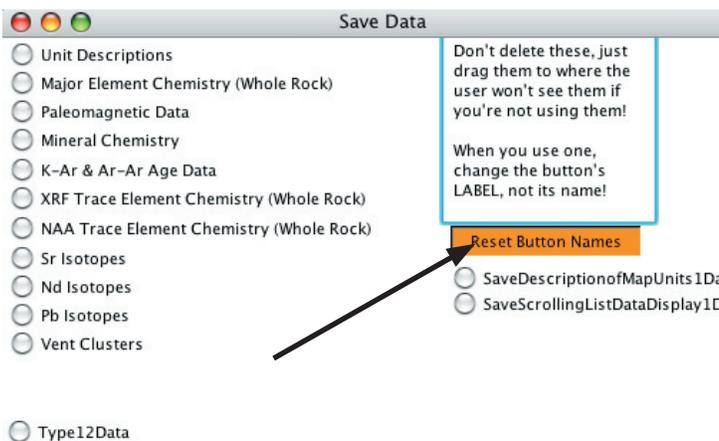


buttons and their associated fields that you're not using out of view to the right of your final stack configuration. It is good practice to keep all buttons and associated fields of a given type together, so move them as a group. Then, change the content of the text-fields associated with the buttons you are using (but do not change its name) from the second tab of Revolution's 'Object Inspector'. This label is copied to a field at the top of the ClickList of samples that is displayed by selecting the bottom check-box button on the 'Data Display Controls' palette. After you've moved buttons and changed the field's content, resize the stack, and set it back to a palette.

## Editing the 'Save Data' Stack's Buttons

The last job we need to do in adding analytical data is to relocate the buttons on the 'Save Data' stack and change the label of these buttons to reflect what kind of data they will allow the user to save. The 'Save Data' stack can be found in the 'Application Browser' (Tools menu). Change the 'Save Data' palette to a 'TopLevel' stack by using the buttons in the 'Palette Setter' stack (as discussed in the last section of Chapter 1, 'Palette vs. TopLevel').

Use the handle in the lower right of the stack to drag it to a larger size; then click on the orange 'Reset Button Names' button. Drag the buttons you will use to the part of the stack you will make visible. Select a button and use Revolution's 'Object Inspector' to change the button's label (but not its name) to reflect the type of data. Instead of closing the 'Object Inspector' after changing the first button's name, simply click on the next button and change its label. In the button's code for Type 1 and Type 5 data, be aware that if no data is found in the respective 'TypeXData' field in the 'AnalyticalData' stack, the code sends a mouseUp



command to a button off to the left of this stack, which will save the data in the two scrolling-field stacks that are the alternative location for these data. When you're done, resize the stack. This stack has code to set its "resizeable" property to false when it runs as a stand-alone, so you don't need to change that, but you do need to use the 'Palette Setter' to change the stack from 'TopLevel' to palette.

## Adding Text to Fields in the 'AuxInfo' Stack

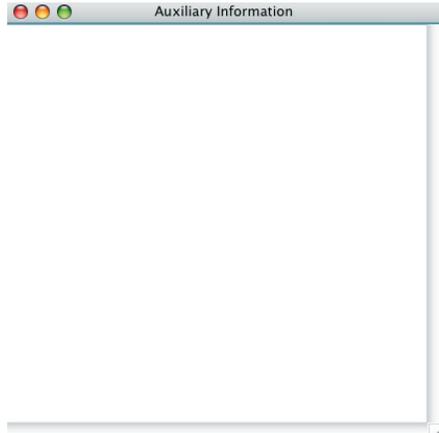
An 'Auxiliary Information' stack (named 'AuxInfo' for brevity) is provided as a place to display text about anything in response to a mouse-click. Examples include information qualifying analytical data, or information as whimsical as to why the main street in Show Low Arizona is named the "Duece of Clubs Highway".

This stack automatically changes to a floating palette and loses its "resizeable" property when the project is made into a stand-alone. In this stack, each discrete text article is stored in a field on a separate card. Script is included with the stack to resize the stack to accommodate a given card and its field when opened.

In the case of analytical data, display palettes 2 through 12 each include an "Info" button, with script that opens a card named "Type2Data", "Type3Data", etc., in the 'AuxInfo' stack (if that card exists). To insert data into the corresponding card and its field in the 'AuxInfo' stack, open Revolution's 'Application Browser' from its 'Tools' menu. Then, if on a Mac, tip the triangle to the left of the 'AuxInfo' stack, and double-click on the appropriately named card (for example, the card labeled 'Type3Data'). Enlarge the stack using the handle on the lower right, and double-click on the field found there. Bring up the 'Object Inspector' to see the field's properties, and select the 'Contents' tab. Then copy your text from your word processor and paste it into the field. Resize the field to fit your text or make it a scrolling field. Be sure you lock the field's text (a property found in the 'Object Inspectors' 'Basic Properties' tab). Save your project after you've made any changes.

You can include any number of new cards in the 'AuxInfo' stack to add text data where needed. Simply open the 'AuxInfo' stack, and choose 'New Card' from Revolution's 'Object' menu. You'll notice a new card is included in the list of cards associated with the stack. Double-click on it and use Revolution's 'Object'

Name	Num	
ddm-template-2005-02-27	1758	
AnalyticalData	1389	
AnimatedCardsWindow2	0	
AnimationStack1	33	
AnimationStack2	38	
AnimationStack3	88	
AnimationStack4	15	
AuxInfo	46	
Type10Data	7	0
Type11Data	8	0
Type12Data	10	0
Type1Data	12	0
Type2Data	11	0
type3Data	9	0
Type4Data	1	0
Type5Data	2	0
Type6Data	3	0
Type7Data	4	0
Type8Data	5	0
Type9Data	6	0
AudioClips		



menu and select 'Card Inspector' and rename the card as you want it to be labeled in the the 'AuxInfo' stack. Then, select the 'field' tool, and draw in your field. At this point the text is not locked by default, and you could use the browse tool to paste or write text directly into the newly created field. Be sure to lock the text when you're done, and resize the field to fit your text. When you place a button to call up this card, simply include the script:

```
on mouseUp
  open card "myNewCard" of stack "AuxInfo"
end mouseUp
```

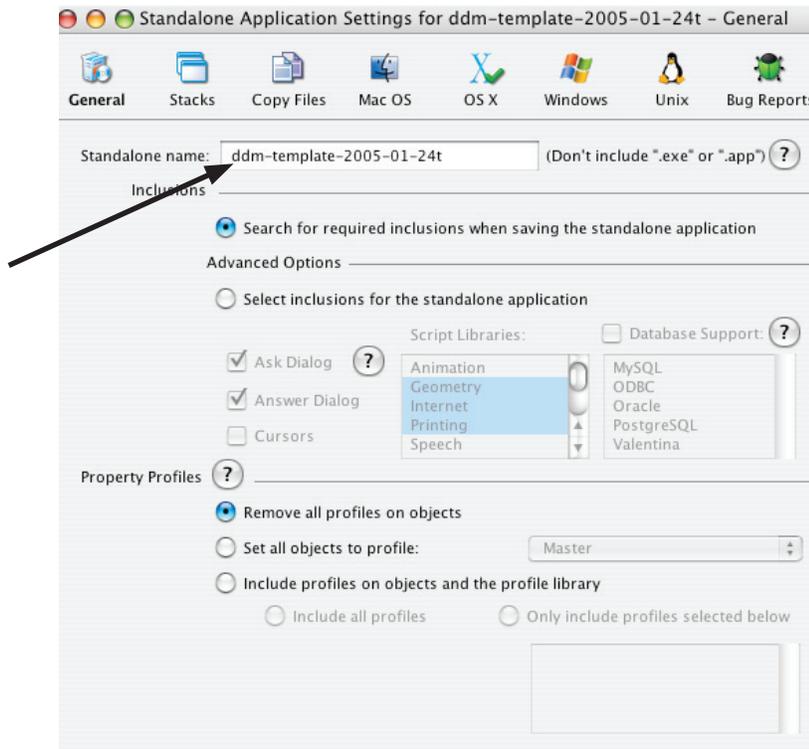
# Making a DDM Revolution Project into a Stand-alone Application

The process of making a DDM project into a stand-alone is relatively straight-forward, and handled almost entirely by Revolution. When the project is made into a stand-alone application, two things will change automatically:

- 1) the 'Set Menus' button will be hidden
- 2) the size of the 'Welcome to' and 'Home Screen' stacks will be locked so that users cannot see the extra objects hidden off to the sides

To make a stand-alone:

- 1) With the project you want to convert open, choose 'File-Standalone Application Settings'.
- 2) Here, there are multiple tabs containing options for creating your application for different platforms, including Mac OS, OS X, Windows and Unix systems.
- 3) On the 'General' tab, enter the file name of your application, without the extension. For example, enter: ddm-template-2008-09-24



- 4) Use the tabs (e.g 'OSX', 'Windows' 'Linux' to change the other settings for your standalone application, being sure to change the names of the DDM in each (e.g in the 'OSX' tab you need to change the DDM name in four places, in the 'Windows' tab, only two).
- 5) When you are finished altering the settings, close this window.
- 6) Now, select 'File-Save As Standalone Application'. The program will now build your standalone application, which may take a few minutes.

# Appendix 1

## List of all stacks in the ddm-template

AnalyticalData	horizType11DataPal9	AhorizType8DataPal4	ProgrammingStatusNotes
AnimatedCardsWindow2	horizType12DataPal1	horizType8DataPal5	ProjectModifier
AnimationStack1	horizType12DataPal2	horizType8DataPal6	SaveData
AnimationStack2	horizType12DataPal3	horizType8DataPal7	ScrollingListDataDisplay1
AnimationStack3	horizType12DataPal4	horizType8DataPal8	ScrollingListDataDisplay2
AnimationStack4	horizType12DataPal5	horizType8DataPal9	ThumbnailFieldRecsForOverlays
AutoTourGuide	horizType12DataPal6	horizType9DataPal1	ThumbnailMovieImage
AutoTourGuide.rev	horizType12DataPal7	horizType9DataPal2	Thumbnails
AuxInfo	horizType12DataPal8	horizType9DataPal3	TourControl
BuildPres	horizType12DataPal9	horizType9DataPal4	TourControl.rev
CorrelationofMapUnits	horizType3DataPal1	horizType9DataPal5	TourInProgress
CrossSection	horizType3DataPal2	horizType9DataPal6	TourInProgress.rev
DataDisplayControls	horizType3DataPal3	horizType9DataPal7	TourPaused
DataPaletteDisplayManager	horizType3DataPal4	horizType9DataPal8	TourPaused.rev
DataStack	horizType3DataPal5	horizType9DataPal9	TourWelcome
DDMMenus	horizType3DataPal6	IconMakerImages	TourWelcome.rev
DescriptionofMapUnits1	horizType3DataPal7	Image1	Type10ClickList
DescriptionofMapUnits2	horizType3DataPal8	Image2	Type11ClickList
DynamicDigitalMapHome	horizType3DataPal9	Image3	Type12ClickList
Screen	horizType4DataPal1	Image4	Type1ClickList
Figure1	horizType4DataPal2	Image5	Type2ClickList
Figure2	horizType4DataPal3	Image6	Type3ClickList
Figure3	horizType4DataPal4	Image7	Type4ClickList
Figure4	horizType4DataPal5	Image8	Type5ClickList
figureCaptionData	horizType4DataPal6	Image9	Type6ClickList
FigureOverlays	horizType4DataPal7	ImageCaptionData	Type7ClickList
FigureStackCaption	horizType4DataPal8	ImageOverlays	Type8ClickList
FindLatLong	horizType4DataPal9	ImageStackCaption	Type9ClickList
FinishedIcons	horizType5DataPal1	imageStackControlPalette	UnitDescription1
G#001	horizType5DataPal2	IndexofArticles	UnitDescription2
G#002	horizType5DataPal3	IndexOfCorCharts	UnitDescription3
G#003	horizType5DataPal4	IndexofCrossSections	UnitDescription4
G#004	horizType5DataPal5	IndexofFigures	UnitDescription5
G#005	horizType5DataPal6	IndexOfImages	UnitDescription6
G#006	horizType5DataPal7	IndexofMaps	vertChemPalette1
G#007	horizType5DataPal8	IndexofMapsandImages	vertChemPalette2
G#008	horizType5DataPal9	WithFeature	vertChemPalette3
G#009	horizType6DataPal1	IntroToDDMs	vertChemPalette4
G#010	horizType6DataPal2	LatLongAdder	vertChemPalette5
G#011	horizType6DataPal3	LoadingStatus	vertChemPalette6
G#012	horizType6DataPal4	Map	vertChemPalette7
G#013	horizType6DataPal5	MapExplanation	vertChemPalette8
horizType10DataPal1	horizType6DataPal6	MapFeaturesAccess	vertChemPalette9
horizType10DataPal2	horizType6DataPal7	MapObjectList	vertChemPaletteL1
horizType10DataPal3	horizType6DataPal8	MapObjects	vertChemPaletteL2
horizType10DataPal4	horizType6DataPal9	MapOverlays	vertChemPaletteL3
horizType10DataPal5	horizType7DataPal1	MapSearchList	vertChemPaletteL4
horizType10DataPal6	horizType7DataPal2	mapstackControlPalette	vertChemPaletteL5
horizType10DataPal7	horizType7DataPal3	MapStacksClosedObjects	vertChemPaletteL6
horizType10DataPal8	horizType7DataPal4	MapTools	vertChemPaletteL7
horizType10DataPal9	horizType7DataPal5	MeasurementCollection	vertChemPaletteL8
horizType11DataPal1	horizType7DataPal6	Palette	vertChemPaletteL9
horizType11DataPal2	horizType7DataPal7	ModalStackSpecial	zFakeDialog
horizType11DataPal3	horizType7DataPal8	MovedIcons	zFakeDialog.rev
horizType11DataPal4	horizType7DataPal9	Movies	zFakeDialog2
horizType11DataPal5	horizType8DataPal1	OptionalObjects	zFakeDialog2.rev
horizType11DataPal6	horizType8DataPal2	PaletteSetter	zFakeMenu
horizType11DataPal7	horizType8DataPal3	preferencesAndSetUp	zFakeMenu.rev

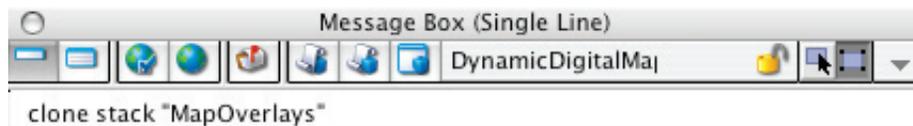
## Appendix 2

### To copy overlays or objects within and between DDMs

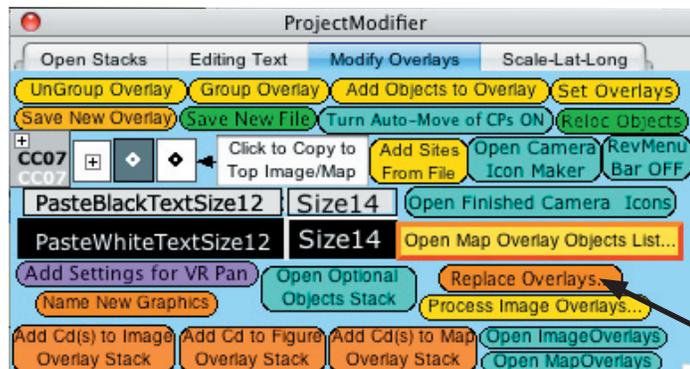
To copy overlays within and between DDMs

Before copying overlays, you should have already created the cards in the target DDM's overlay stack into which you will paste the overlays. The names of these cards are not changed by this operation, nor are their numbers, which must be the same in both DDM projects. In this example, we will assume you are copying overlays into the 'MapOverlays' stack. If you are copying image, figure, cross section, or correlation chart overlays, the procedure is identical. You can also copy overlays from another stack within the same project, using the option called 'A Stack in this DDM'.

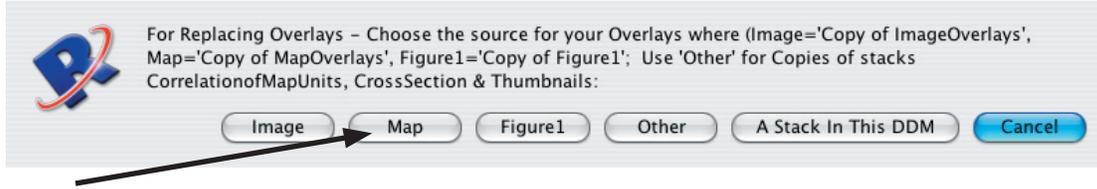
- 1) Start Revolution, and open your source DDM project (that is, the one containing the overlays you want to transfer into your new DDM).
- 2) Open your message box (use Revolution's "Tools-Message Box" menu selection, or the shortcut keys: command-m; control-m for PCs).
- 3) Type into the message box the following:



- 4) Press the "return" key. At this point a stack named 'Copy of MapOverlays' will be the top stack. You can see that it exists in the 'Window' menu. It will be a mainStack, that is, not a substack of your previously loaded (source) DDM.
- 5) With the 'Copy of MapOverlays' still the top stack, go to the 'File-Save-As' menu selection, and save the stack 'Copy of MapOverlays.' For convenience, save it into the folder containing your target DDM. You can check that this stack is on top by confirming that it is 'checked' in the 'Window' menu.
- 6) Quit Revolution. Restart Revolution. Open your target DDM.
- 7) In the 'Development' menu, choose to 'Suppress Messages'. Now, open the stack that you just saved, named 'Copy of MapOverlays.'
- 8) Now, choose to 'Unsuppress Messages' in the 'Development' menu.
- 9) Open your 'Project Modifier' stack. In that stack, click on the orange button named 'Replace Overlays...'



- 10) To the question in the pop-up dialog box, for this example choose the button 'Copy of MapOverlays'. To copy overlays from within the same project, use the 'A Stack in This DDM' button.



- 11) Enter the number of the card whose overlay you wish to start copying, followed by the ending card number, as shown in the next two dialog boxes. All cards must have sequential numbers, and each must be the same number in both the source and target stacks. To copy one card use the same starting and ending number.

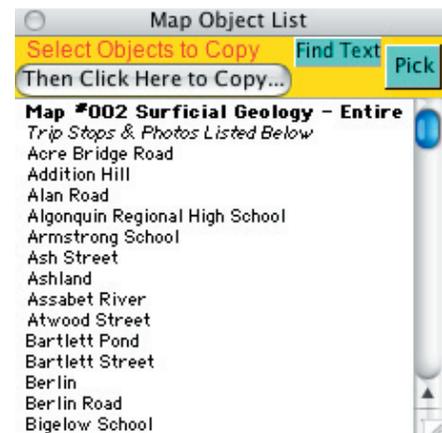
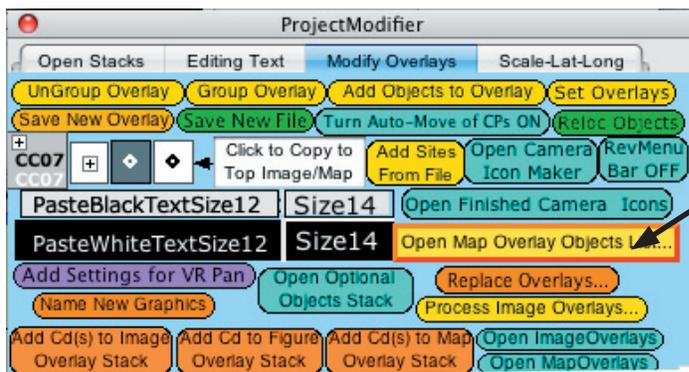


- 12) Follow the rest of the prompted instructions to replace your overlays.

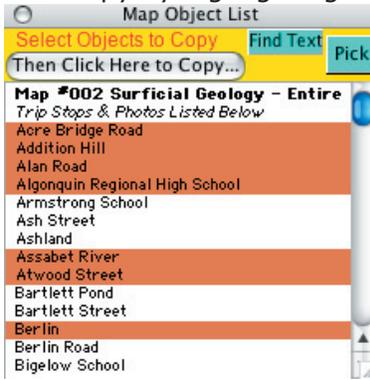
To copy objects between overlays

If you do not want to copy every object included on an overlay to another, the 'Copy Objects to other Maps' button lets you choose particular objects to copy from one overlay to another. For example, say you had image icons, unit labels and street names on one map overlay, but you only wanted to copy the street names to another map's overlay. This button lets you do just that.

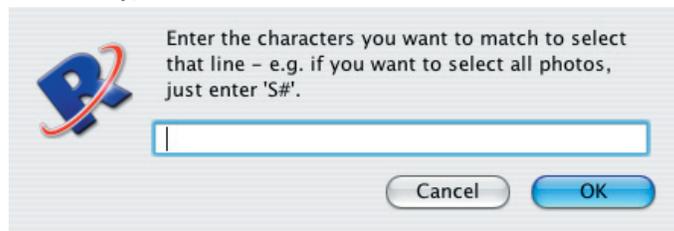
- 1) Open the map from which you want to copy objects.
- 2) Click the 'Open Map Overlay Objects List' button on the 'Modify Overlays' tab of the 'Project Modifier'.



3) Now, select the objects you wish to copy by highlighting them in the list.

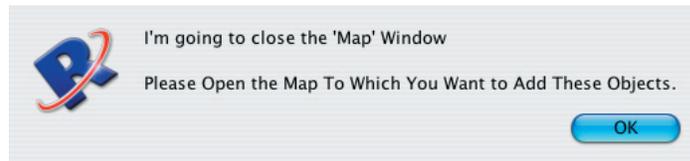


4) If you want to copy a group of objects that all start with the same characters (for example, all image icons beginning with 'S#'), click the 'Pick' button and follow the instructions.



5) When you have selected all the objects you want to copy, click the 'Then click here to copy' button.

6) Instructions will appear. You will need to open the map to which you want to copy the objects from the 'Index of Maps'.



7) Then, use the 'Edit-Paste' option to paste your objects, and click the 'Add Objects to Overlay' button, and then the 'Save Overlay' button, both found in the 'Modify Overlays' tab of the 'Project Modifier.'

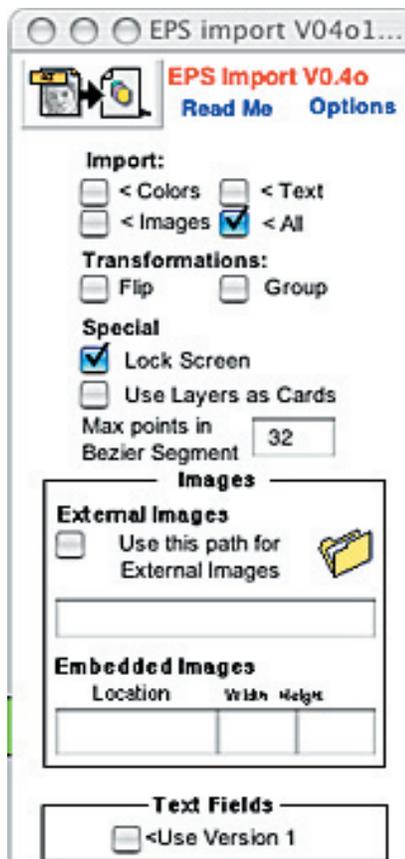


# Appendix 3

## Importing Graphics Created with Illustrator

Note that DDM-Template versions 2008-09-16 and later let you import sample sites or labels with known x,y or latitude-longitude coordinates from a text file - see the last part of section 'Editing Overlay, p. 36 for details. To import overlays from an Illustrator file, first we need to separate the text from the graphics, and save them in two files. I use a PC to do this, because the Revolution program I use for importing the files, written by Alejandro Tejada, understands the PC file format when you import the file containing text, but not the Mac file format containing text objects. It seems to import files containing graphic objects equally well, regardless of whether you use a Mac or PC to save the files. To separate the files:

- 1) Start Illustrator.
- 2) Open the file - if importing out of ArcInfo, have ArcInfo save the file as an EPS file.
- 3) Flatten all layers.
- 4) Make a new layer in Illustrator in which to place your text.
- 5) Use the menu 'Select-Object-Text Objects' to select all text (make sure the text is not grouped with other objects first!). Be sure the new "Text" layer is selected in Illustrator's 'Layers' palette, and use the menu 'Object-Arrange-Send to Current Layer' to move all text to that layer. While in that layer, place a small vertical line, whose top is in the upper left corner of the underlying image. You can use the 'pen' tool with the shift key down to draw straight lines (click twice, once in upper-left, then below it about 10 pixels or 1/4 inch). Copy this line to the underlying layer. The top end of these lines will be used to insure proper alignment of the graphics on your DDM overlay, once you've imported these two layers into Revolution.
- 6) Next, you need to save these layers separately in a format that Revolution can import. To do this, turn off the visibility in your graphics layer (click on the 'eye' on the left side of the line containing the layer's name). Then, with your 'Text' layer the current layer, select all objects, group them, and cut them. Make a new Illustrator file, and paste the grouped text into it. Save this as an Illustrator Version 8 file. Before saving the graphics layer, use the menu 'Select-All' and group all graphics. Then, with the group selected, use the menu 'Transform-Reflect' and select the 'Horizontal' option. Finally, save the file as an Illustrator Version 8 file. Quit out of Illustrator.



Now to import these files into Revolution, launch Revolution, and open the file 'EPS import V04o'. Note that importing large files with lots of objects is slow, and text file import somewhat problematical.

1) To import the graphic file make sure the 'All' checkbox is checked, and click on the 'AI' ->icon in the upper left, select the Illustrator graphics file and open it. Next, save the resulting stack with the grouped graphics on it. When you're done importing graphics, and you've quit out of the 'EPS Import' program, you'll want to open this stack with your DDM and copy these graphics and insert them into your map or image overlay when you have it open. You'll probably want to ungroup the objects after you've positioned the group in your overlay. Follow the instructions in the "Editing Overlays" section to do this.

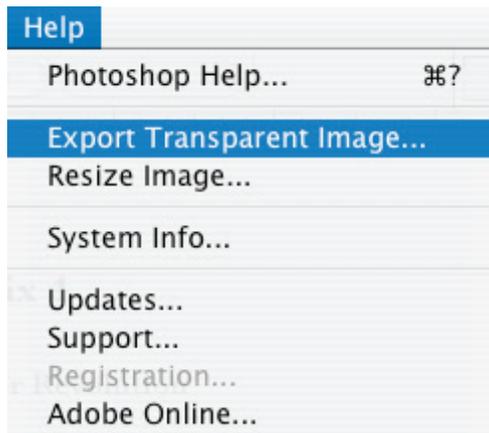
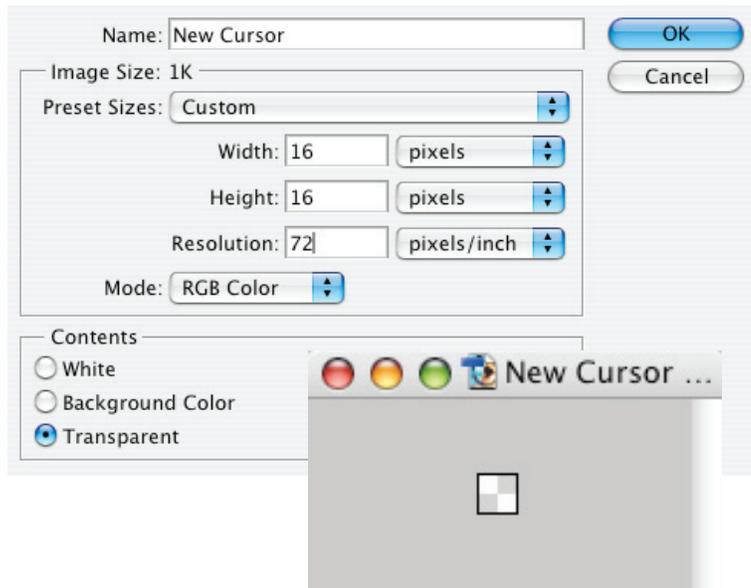
2) To import the text file make sure the 'Text' checkbox is checked, and click on the 'AI' ->icon in the upper left, select the Illustrator text file and open it. If that does not result in the import of text objects, try again, with the checkbox 'Use Version 1' at the bottom set. Use the 'Application Browser' to check for objects on the resulting stack, if none appear. Next, save the stack with the grouped text on it. When done importing text, and you've quit out of the 'EPS Import' program, you'll want to open this stack with your DDM and copy these fields and insert them into your map or image overlay when it's open. You'll probably want to ungroup the fields after you've positioned the group in your overlay. Follow the instructions in the "Editing Overlays" section to do this.

# Appendix 4

## Creating a custom cursor for Revolution

There are probably many ways to do this successfully with a little trial and error. Here is one technique that works and is easier than many others.

1. Create (draw) the image in Adobe Photoshop (I used 5.0.2).
  - When opening a new project, choose a size of 16 pixels by 16 pixels. Choose transparent for the contents option.
  - Draw the image with the pencil tool in an inverted color scheme (black where you want white, and white where you want black). You can enlarge the view to make this easier.



- When you are finished drawing, make the image exportable by choosing the 'Export Transparent Image...' option under the 'Help' menu.
- In this option, choose the following:
  - 'my image is on a transparent background'
  - for use 'online'
  - GIF format
  - say 'ok' to the image color reducer (it should indicate 3 colors)
  - choose a file name to save as
  - click 'ok' for the normal option
  - choose 'finish' to end

2. Next, import your image into Revolution under File-> Import as control-> Image file. When the image appears, drag it to the side of your workspace, and give it an appropriate name and image ID#.
3. In order to use this image in Rev, there is one more step. Under 'Tools' open the Paint tools palette. Choose the pencil tool, then command-click your image to enlarge. Now, click the pencil tool over your image, in a place where it will not alter the image. If you do make an unwanted mark, undo that move, do not erase. *It is essential to click the pencil tool within the image, even if you will make an unwanted mark. Just undo the unwanted mark afterwards.*
4. Now you should have a usable icon that will be in the correct color scheme when utilized. Enter the image ID# into your script and try!

## Appendix 5

### Running the debugger to watch code as it is executed

- 1) Open the script of the object whose code you want to follow while you execute it. You can select the object and hit command-e (control-e for PCs) keys, or display the script by selecting 'Object Script' from the 'Object' menu.

*Note: If the script window is the top window, Revolution's menu bar is different than it appears when you have one of the stack windows as the top window. In either case the items you need are on both menus. The menu with a Revolution stack selected as top stack is the "Development" menu; with the Script stack selected as the top stack, the menu you want to pay attention to is "Debug".*

- 2a) If one of the Applications stacks is the top window, select the menu 'Development-Script Debug Mode.'
- 2b) Or if your script window is the top window, select the menu 'Debug-Script Debug Mode.'
- 3) Either 2a or 2b above will open the script window with an open gray column to the left. Click in that area to the left of the line where you want to start watching the script action.
- 4) From either menu, select 'Variable Watcher' (and, if wanted, the 'Message Watcher') to open it, so you can see what's happening as you step through the lines of code as they are executed.
- 5) Bring the application stack on which you wish to initiate action to the top, and execute the action (for example, if it is a button with a mouseUp command, click on the button).
- 6) As action starts, you'll see buttons along the bottom of the script window. To execute the next line of code, click 'Step Into'. As each step is executed, the variables that are changed, and messages acted on show up in the two palettes. Watch them to figure out what's happening.
- 7) You can choose the 'Step Over' button if the next line to be executed would take you to action in another handler, and you want to skip watching that action and just execute it. Thus 'Step Over' will get you back to the next line below the line calling that handler.

Hopefully, doing this will let you watch what's shaking with your script as it happens.

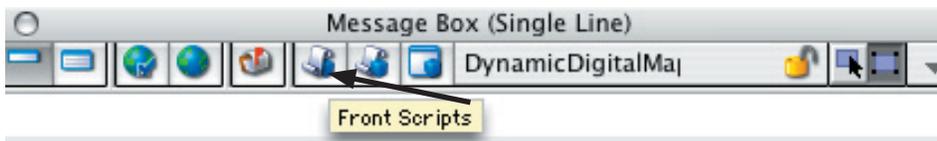
## Appendix 6

### To shut down the “cREVTable” frontscript

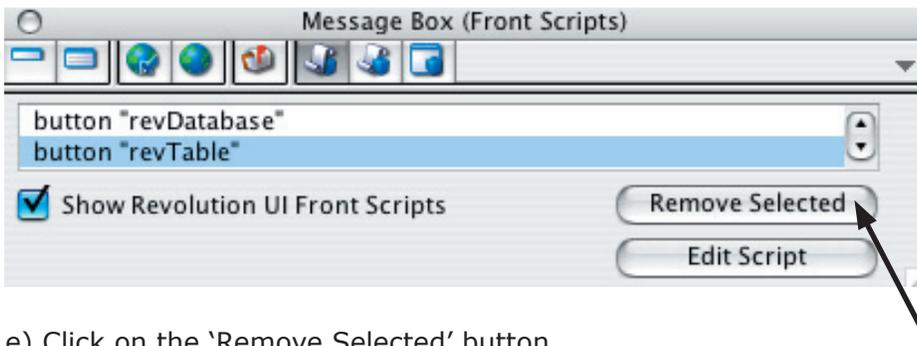
*Note: With version 2.0 and above, Revolution introduced a “cREVTable” frontscript that we find extraneous, and which we never use to date (2004.01.24). You’ll see “cREVTable” being executed continually in the Message Watcher palette. This frontscript slows down the opening and closing of stacks, and makes data viewing cumbersome.*

To shut that down:

- a) Open the Message palette using `command-m` (`ctrl-m` for PCs).
- b) Click the FrontScripts icon.



- c) Select the `Show Revolution UI Frontscripts` check box.
- d) Scroll down and select the line that says: `button "revTable"`



- e) Click on the `Remove Selected` button.

## Appendix 7

### If an image or map file doesn't load

Solution(s):

- 1) Check that the jpeg file wanted is found in the disk (or server) directory in which it should be located. In the case of map jpeg files, they should be in the correct 'mapprod1' (2,3,4, etc...) folder for different thematic maps. In the case of image jpeg files, make sure they all reside in the 'imagprod' folder (NOT imageprod, no "e" in the name).
- 2) Check that the files are indeed saved in a 'jpeg' format, and that each have the extension name '.jpg' appended to the first eight (or fewer) lower-case letters. For example, a file could be named "n8000a.jpg". In this doesn't work, you could try the following:
  - Copy the file to your desktop
  - Load it into PhotoShop
  - Change the file format to 'RGB' using the menu options: 'Image-Mode-RGB Color'
  - Save the file back to the desktop
  - Copy the file back to its correct directory
- 3) Make sure each "problem" file that doesn't load has a card that contains its overlay, located in the 'MapOverlays' or 'ImageOverlays' stack. Also check that it is properly named. In the case of 'imagprod' jpeg files, the overlay card should just be the name of the file. In the case of 'mapprod\_' jpeg files, the name of the jpeg map's overlay card (found in the 'MapOverlays' stack) must include the directory ('mapprod\_'), as well as the file name. For example, the overlay card for a map, which is thematic map type 2, with a jpeg file name "northeast.jpg", should be named "mapprod2/northeast.jpg".

## Appendix 8

### Procedure to make eps files into jpegs for map segments

(These were written using Photoshop 5.0.2)

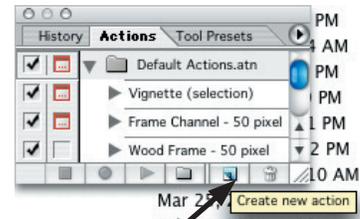
- 1) Open in Photoshop with following settings: 400%, 72 dpi, anti-alias & Constant Proportions selected.
- 2) Cut image down to size (before you do, it will have a large number of extra pixels outside of the map image).
- 3) Use 'Save a copy' and save it as a jpeg with no compression (image quality = "best" or 10 - use 12 for later Photoshop versions)
- 4) Finally, cut the Canvas size to the minimum, with the image placed up the NW corner on the final cut.

# Appendix 9

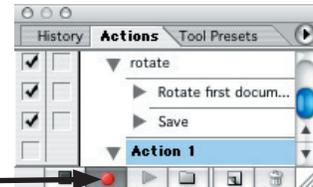
## Batch Processing

Batch processing is a useful feature for making the same changes to multiple files. This can be done through Adobe Photoshop. Let's say, for example, you have multiple images that all need to be rotated 90 degrees clockwise and converted to JPEG files. Complete the following steps:

- 1) Open the first image to be processed.
- 2) In the 'Actions' palette, click on 'Create New Action'
- 3) Name your new action



- 4) Click the 'Record' button on the 'Actions' palette. Everything you do from now on will be recorded as part of your new action. These steps can be reordered or edited later, from the 'Actions' palette.

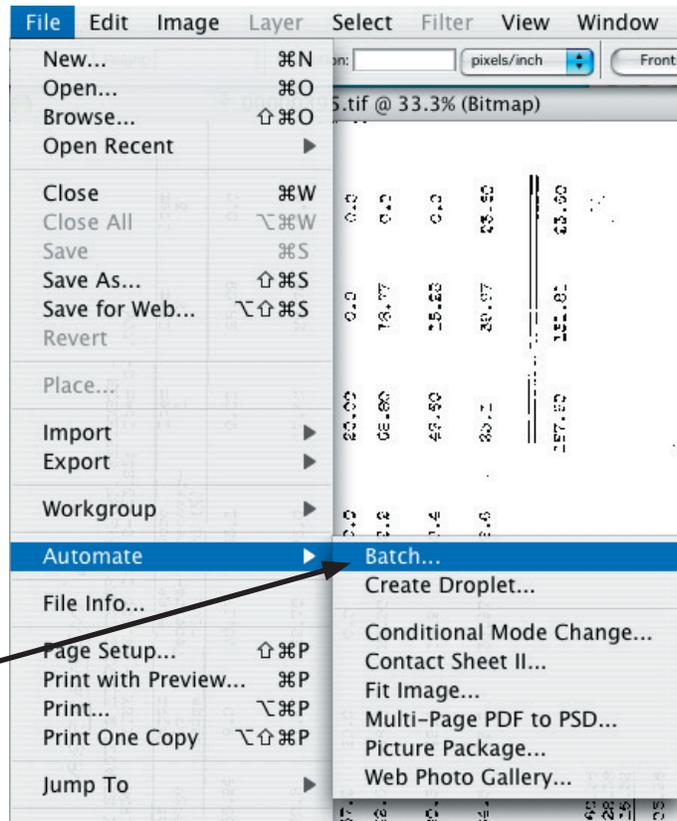


- 5) Complete all the steps that you want to be included in your action, for example, rotate your image, file-save as a jpeg and choose the quality to save as.

- 6) When you are finished with each step, click the 'Stop' button on the 'Actions' palette.

- 7) Now you can edit the steps in this palette.

- 8) To run the action, go to 'File-Automate-Batch'.



In this option, you can choose the action to perform, the source folder for the files to process and the destination for the finished files. You can also choose options for how the files should be saved.

