

## 1 Introduction

Resource Manager is a customized FileMaker® relational database designed to enter and manipulate strategies and resources for viewing in the Resource Analysis mode of TAP II.

A *strategy* is here defined as a set of *resources* that are linked to a unique set of one or more TAP II receptor sites. These may be *response resources*, such as the equipment required to implement the booming strategy for a given area. They may also be *environmental resources*, such as the number of birds or the length of a sensitive shoreline habitat that would be affected by oil hitting a given section of shoreline.

## 2 Installation

FileMaker changes all its data files as it runs, thus Resource Manager cannot be run directly off the CD-ROM. To use the program, the entire Resource Manager folder (directory) must be copied to your hard drive. Be sure to keep all the files together in this folder.

**Macintosh** On the Mac, all you have to do is copy the entire **MAC** folder (it is inside the **Resource Manager** folder). This folder can be put anywhere, and named anything, as long as all the files in it stay together.

There is also a folder named **MHR Files**. It contains sample files for use with the Resource Manager. They can be left on the cd-rom, or copied anywhere else.

To start the Resource Manager, double click on the **Resource Manager** icon.

**Windows** On Windows, copy the entire **Windows** directory (it is inside the **Resource Manager** directory). This directory can be put anywhere, and named anything, as long as all the files in it stay together. Once the files have been copied to your hard disk, they will have the “read only” property set. Select all the files with the **.USR** extension, and then select the File:Properties menu item. Uncheck the “Read Only” checkbox. This will allow Resource Manager to write to its temporary files.

There is also a directory named **MHR Files**. It contains sample files for use with the Resource Manager. They can be left on the cd-rom, or copied anywhere else.

To start the Resource Manager, double click on `Resource Manager .EXE` icon.

### 3 Relationships between Strategies and Sites

Figure 1 shows a hypothetical bay with a set of eight booming strategies at seven receptor sites. Resource Manager is designed to handle a variety of possible relationships. For example, strategies 1 (S1) and 2 (S2) are *one-to-one* relationships where a single strategy is associated with a single receptor site. Strategy 8 is a *one-to-many* relationship, where a single strategy is associated with more than one receptor site. In this case, Strategy 8 (S8) would be invoked if any of the three receptor sites (i.e., 5, 6, or 7) are impacted by oil at, or greater than, their designated level of concern (LOC). Strategies 3 through 7 (S3 - S7) are all examples of *many-to-one* relationships. These relationships could be used for a sensitive area (e.g., site 3) where a small amount of oil reaching the site would require a single layer of boom (S3), but a larger amount would require an additional layer (S6),

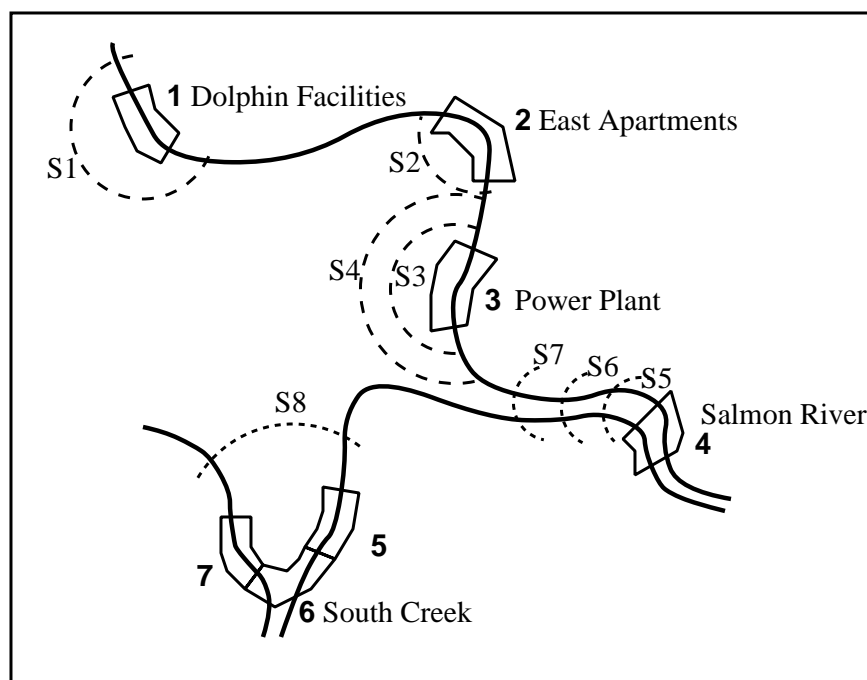


Figure 1: A set of booming strategies for a hypothetical bay.

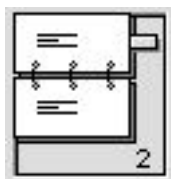
and so on. Thus, at the same site, one strategy would be associated with site resources at one LOC, and a different strategy with the site at a higher LOC.

## 4 Tutorial: Working with Resource Manager

- A smaller sample file of Resource Manager, **Sample.MHR**, is included in the folder **MHR files**. The example functions described below will work with this file.
- Start Resource Manager by double-clicking the “Resource Manager” icon (“Resource Manager.Exe” in Windows) in the Resource Manager folder. This opens the “Strategy” file, the front end of the program.
- To edit a TAP II resource file, click the “Read TAP II file” button (upper right). On the TAP II CD-ROM, there is an empty file for your location (**empty-SF.MHR**), containing the correct number of receptor sites. After clicking the “Read TAP II file” button, you will be presented with a file requester dialog box. Make sure that it is set to display All Available files, and select “Sample.MHR.”

### 4.1 Entering Local Names for Sites

- Click the “Set Site Name” button (see Figure 2).
- Each TAP II site can be given a local name by changing the name in the “Locally known as” box. The default name for each site is its site number. Scroll through the records by using the scroll tool in the upper left corner of the window:



- Site 1 (see Figure 1) is known as the “Dolphin Facilities,” so that name can be entered.
- Scroll to site 2, and enter “East Apartments.”
- Scroll to site 7 and enter “South Creek.”

- Continue with all the named sites from Figure 1.
- Click the “Back to Strategies” button to return to the main window.

Once your names have been defined, save them in a TAP II file (click the “Write TAP II file” button) with a new name and the MHR extension (`ExampleNames.MHR`). This file can then be used for other datasets with consistency of site names.



Figure 2: The site window of Resource Manager after a local name has been entered.

## 4.2 Entering Header Information

Resource Manager allows the user to add information to the header of the MHR files (see Section 5). This information must include a name for the dataset and the date that it was generated. Any other information to be stored with the data can be entered as well. To edit or add information to the header:

- Click the “Add Header Info” button (upper right) to open the Header window (see Figure 3).
- Edit the Name and Date fields to change the name and date as desired.
- The User Data field can contain any information that you want kept with the data. This might include who entered the data, its source, etc.
- You can have any number of User Data items. To add an additional item, choose “New Record” from the “Mode” menu.
- Click “Back to Strategies” to return to the Strategy window.



Figure 3: The header window of Resource Manager showing sample user data.

### 4.3 Entering a Booming Strategy

Continuing our example, suppose that booming strategy S8 (Figure 1), protecting South Creek sites 5, 6, and 7, requires the following equipment:

- 1200 ft of boom
- 2 utility boats
- 5 people
- 10 20-lb. anchors

#### 4.3.1 Entering Types of Response Resources

All the equipment types needed for this strategy must be entered into the database. Because future strategies will likely require many of the same resource types, they do not need to be entered for each one.

- Click the “Add Resource” button (upper right) to open the Resource List window (see Figure 4).
- In the Resource Name field, replace the words “Sample Resource” with the words “Boom (ft).” It is helpful to incorporate units (e.g., ft, m) into the resource name.
- In the Title for Graph field, enter “Feet of boom used” which will appear at the top of the TAP II resource analysis graph.



Figure 4: The resource window of Resource Manager after resources have been entered.

- To add another resource, click the “New Resource” button.
- Enter “people”, “utility boats”, and “20-lb. anchors” in the Resource Names field and the Title for Graph field.
- Return to the main window by clicking the “Back to Strategies” button.

#### 4.3.2 Entering the Strategy

Upon completing the steps described below, your screen should look like Figure 5.

##### Strategy Name

- Replace the words “Sample Strategy Name” with “Booming Strategy 8”.

**Response resources associated with the strategy** Each strategy has an associated set of resources. In this case, it is the set of equipment required to implement that strategy.

- Click in the first Resources field (where it says “Sample Resource”) and select “Boom (ft)” from the list.
- Click in the Quantity box to enter the quantity of boom needed (1200).



Figure 5: The main window of Resource Manager after a booming strategy has been entered.

- Enter another resource, and repeat the above two steps to enter “people”, “utility boats”, and “20-lb. anchors” and the quantities of each.

**Associated Sites** Each strategy must be associated with one or more sites, each with its own level of concern (LOC). The measure of the LOC is the threshold volume of oil that reaches a site above which the strategy is invoked. Each site is designated a specific LOC, since the tolerance thresholds of different shoreline types exposed to different amounts of oil would invoke different strategies.

- Click in the Site field, and select a site from the list. The first site associated with Strategy 8 is site 5, known as “005”.
- Click in the LOC box and set the LOC to 5.
- Click in the Units box, and set the units to Barrels
- Click on the next row to add another site.
- Add the site “South Creek” and set its LOC to 2 Barrels (South Creek is a more sensitive shoreline).

- Add site “007”, and set its LOC to 5 Barrels

**Saving the data** After adding a strategy, it is a good idea to save the data to a TAP II file.

- Click “Write TAP II File”, and give the file a name with the .MHR extension (`SampleStrategies.MHR`).

To add another strategy, click the “New Strategy” button. To delete a strategy, click the “Delete Strategy” button.

**Strategy 1** This is the simplest of Strategy types, a *one-to-one* relationship. In this case, there will be only one receptor site with a single LOC.

- Click “New Strategy”.
- Enter “Strategy 1” as the name.
- In the Resources fields, select the desired quantity of the available response resources: 20-lb anchors, 2; boom(ft), 400; people, 2; utility boats, 1.
- In the Sites field, select the Dolphin Facilities site, and set the LOC to 2 Barrels.
- Save the data in a TAP II file by clicking the “Write TAP II File” button. Select “Replace existing Sample Strategies MHR”.

Additional Strategies can be added in a similar manner.

#### 4.4 Editing an existing resource file

Open an existing TAP II MHR file by clicking the “Read TAP II File” button. Note: All the existing data in Resource Manager will be overwritten, so make sure that it has been saved in a TAP II MHR file by first clicking “Write TAP II File”.

The dataset can be manipulated in the following ways:

- Add a strategy by clicking the “New Strategy” button.
- Delete a strategy by clicking the “Delete Strategy” button. If a resource or site is currently selected, a dialog box will come up, asking if you want to delete the entire master record or the related record. Click “Master” to delete the entire strategy.



- Delete a resource from a strategy: Click on the resource you want to delete, and click the “Delete Resource” button.
- Delete a site from a strategy: Click on the site you want to delete, and click the “Delete Site” button.
- Delete a resource from the entire dataset: Click the “Add Resource” Button to view the Resource window. Scroll through the records (upper left) to find the resource you want to delete. Click the “Delete Resource” button.

## 5 TAP II Resource File Format (MHR format)

The files exported by Resource Manager and readable by TAP II are standard ASCII tab-delimited text files. They can be read and manipulated by any program that can handle ASCII files, such as a text editor, spreadsheet, or database program. For data in another format, you may want to generate MHR files with another application, rather than re-entering it into Resource Manager. However, to be readable by TAP II and Resource Manager, the file must adhere to the following format.

The Resource File format consists of the following (see Figure 6):

**Header** The header must appear at the top of the file, and the first line of the header must read:

```
[FILETYPE]<tab>MHR<tab>1.0
```

where the <tab> represents a tab character. After the first line, there can be any number of lines in the following format:

```
[keyword]<tab>any text
```

The keywords understood by TAP II and Resource Manager are:

[NAME] of the dataset

[DATE] in DD/MM/YYYY format

[USERDATA] Any other information you may want to include with the dataset.

All MHR files must have a name, a date, and at least one UserData line.

**Body** After the header, there can be any number of lines of data in any order in the following format:

Key<tab>data<tab>data<tab>...

The key can be one of the following letters, each of which represents a different type of data and dictates the meaning of the following data.

**M (Managed Resource)** For each resource in the file, there is one M line, in the following form:

M<tab>resource number<tab>resource name<tab>graph title

The resource number is a unique key for that resource, so that it can be referenced in other parts of the database. The resource name is the name of the resource, and the graph title will be the title of the graphs generated by TAP II in Resource Analysis mode.

**H (Hit Table)** Specifies which receptor sites are linked to which strategies. For each receptor site associated with a strategy, there is one line in the following format:

H<tab>strategy number<tab>site number<tab>LOC<tab>units

The strategy number is a unique number that refers to a given strategy. The site number is the number of a site associated with that strategy. The LOC is the level of concern for that site and strategy, in the units specified in the units field. Units can be in “Barrels”, “Gallons”, or “Metric Tons”.

**R (Resource Table)** Specifies how much of each resource is associated with each strategy. There is one line for each strategy-resource combination:

R<tab>strategy number<tab>resource number<tab>amount

The strategy number is the same as above; the resource number is the number of a given resource in an “M” line; and the amount is a number indicating the quantity of the resource, in units appropriate to that resource.

**A Site Alias table** Specifies the local names given to the receptor sites. Although these data are displayed by the Resource Manager, they are ignored by TAP II. If these data are to be read into Resource Manager, there must be one line for every site in your location. If there is no local name for the site, the number can be used, although it is a good idea to pad the number with leading zeros so that they will alphabetize correctly (i.e., 001 for 1, 050 for 50, etc).

A<tab>site number<tab>site name

Site number is the TAP II number for the site. Site name is the local name.

**S (Strategy Name)** These data are used by Resource Manager, but ignored by TAP II. If the data are to be read into Resource Manager, there must be one line for every strategy number referred to in other parts of the file.

S<tab>strategy number<tab>strategy name

Strategy number is used to refer to the strategy in other parts of the file, and strategy name is the name given to the strategy.

See Figure 6 for a sample MHR file.

## 6 Structure of the Database

Resource Manager consists of a FileMaker run-time program and a set of data files. FileMaker creates a separate file for each table of data in the database. Resource Manager provides an interface that allows the user to edit the data without explicit knowledge of the database structure, although a cursory understanding can be helpful should difficulties arise.

Resource Manager is divided into eight files listed below, all interlinked by a set of relations.

**Strategy** The front end of the database, containing the strategy names and numbers and an interface for editing the strategies.

**Resource** Lists all available resources associated with each strategy.

**Site** Lists all receptor sites, by TAP II site number and local site name.

**Header** Data that will go into the header of the resulting TAP II file.

```
[FILETYPE] MHR 1.0
[NAME] Sample File
[DATE] 1/12/99
[USERDATA] A Sample MHR File
M 1 Boom (ft) Feet of Boom used
M 2 Utility Boats Number of Utility Boats Required
M 3 People Number of People Required
M 4 20 lb. Anchors Number of 20# Anchors
H 1 5 5 Barrels
H 1 6 2 Barrels
H 1 7 5 Barrels
H 2 1 2 Barrels
R 1 1 1200
R 1 2 2
R 1 3 5
R 1 4 10
R 2 4 2
R 2 1 400
R 2 3 2
R 2 2 1
A 1 Dolphin Facilities
A 2 East Apartments
A 3 Power Plant
A 4 Salmon River
A 5 005
A 6 South Creek
A 7 007
A 8 008
A 9 009
A 10 010
S 1 Booming Strategy 8
S 2 Booming Strategy 1
```

Figure 6: A Sample MHR file. Note that the fields are separated by <tab> characters.

**HitTest** Sets of receptor sites and associated resources and levels of concern (LOC), linked relationally with strategies.

**ResList** Sets of resources associated with each strategy.

**Export** Scripts required to export the data to a file readable by TAP II.

**Import** Scripts required to import the formatted TAP II resource file (created by Resource Manager or by another application)

Filemaker alters these files directly whenever a change is made to any of the data. Because the user may want to maintain more than one separate dataset, Resource Manager has been designed to export to, and import from, the TAP II format. The TAP II-formatted files should be used to save and maintain the data. These files are given the **.MHR** file extension. This is not important on the Macintosh, but can be helpful in Windows.