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FILE EXTRACTION AND REPORTING

You can extract data entered into the TIP system with other software packages to create graphs, spreadsheets and reports. You can also create very sophisticated reports from within the TIP System. Since the creation of reports can be complicated, there are now some standard extractions and reports which have been created within the Reporting Menu of TIP under the appropriate sub-menu items. This enables basic reports to be created with little effort on the user's part. What these are and how to use them is listed in **Appendix K - Standard Extractions**. It is hoped that these reports will prove useful as well as demonstrate some of the features of the Reporting Menu, thus further encouraging its use. Read on for information on how to create your own extractions and reports.

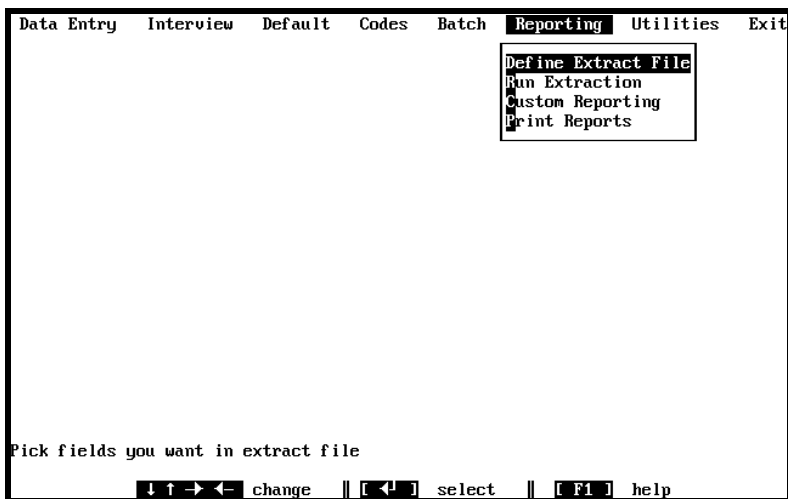
The REPORTING Menu

The options on this menu are the key to extracting data and creating reports.

The structure of the TIP data is very complex. This complexity is the result of attempting to encompass many different kinds of related data into a single data system. This complexity, however, need not be a hindrance to the user. The options on this menu will make the laborious task of retrieving data less of a problem.

TIP data is stored in several files on your microcomputer. To reduce this complexity, you must

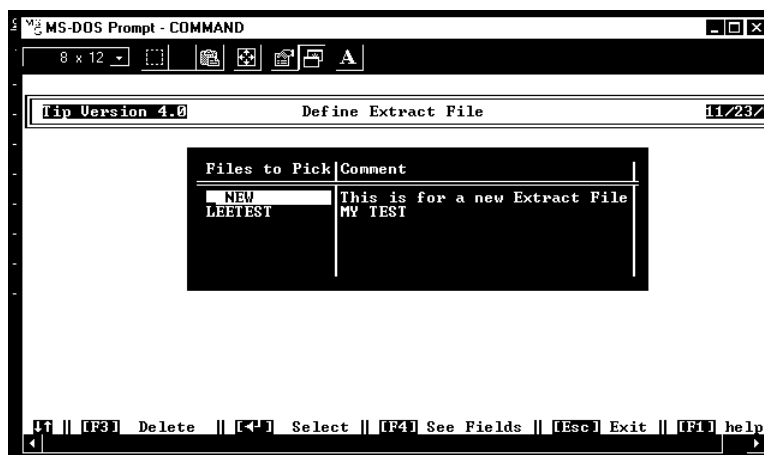
first create a single file. This is done through the Define Extract File and Run Extract options of the Reporting menu. An extract file must be created before you can write a report, but you may also use the extract capabilities to create files that you can use with other programs such as spreadsheets that will allow you to manipulate your TIP data and create graphs and charts.



DEFINE EXTRACT FILE

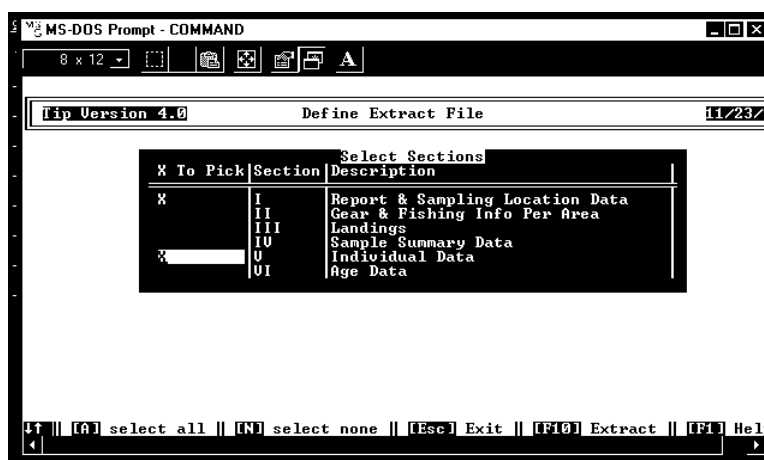
This option will allow you to extract the TIP data into a single file. You will be able to select only the sections that you wish to work with as well as limit the fields that you wish to include in the new file. In addition, you will be able to sort the fields in any order that you wish. The program will allow you to output data in one of several file formats so that you won't need to convert your data to access it with other software.

After selecting the Define Extract File from the Reporting menu, you will see a list of available extraction files. The first file on the list is called NEW. If you want to define a new extraction file, select this option by pressing the [Enter] key. The other names on the list are file extraction definitions that were created before. If you want to see the fields that were selected, highlight the name of the definition you wish to see and press the function key [F4]. You may print the field list by pressing the [Ctrl] and the letter [P].



After you have pressed the [Enter] key to select whether you want to create or revise an extraction definition, the next screen you see will be the list of TIP sections. Press the letter [X] to mark the sections from which you wish to extract data. If you would like data from all section press the letter [A]. If you changed your mind and would like to select no sections, press the letter [N]. After you selected all the sections that you need, press the function key [F10] (EXTRACT) to go on to the next screen.

The field selection screen will display all of the fields for the sections that you have selected. The first two columns display the TIP section and the field name.



To select a field, highlight the field and place the cursor in the column labeled "X to pick". The field order will be automatically assigned by the program in the order that you select the fields. You may change the order by typing new numbers in the column labeled "Field Order". If you mistakenly change the field order number and there is a duplicate, you will not get an error: the fields will simply be extracted in the order in which they are listed.



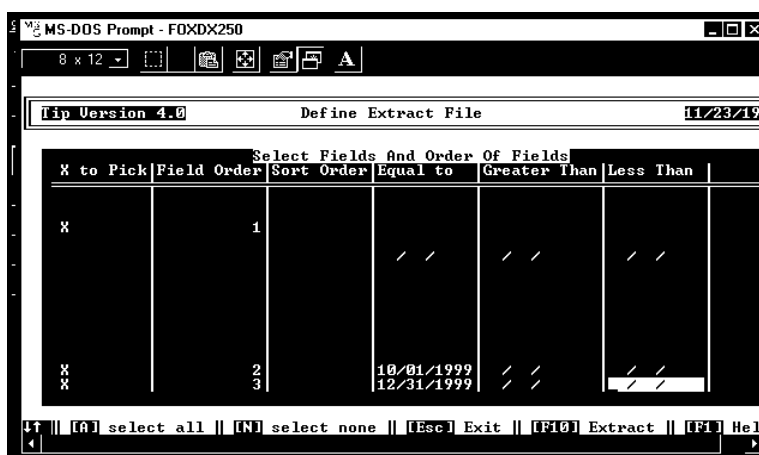
The sort order column allows you to specify in which order you want to extract the data. By entering numbers in this field, you can have your data sorted by State, County, Information Source, etc.

Note: *If you are planning to use the Custom Reporting feature of TIP, it is important that you enter a sort order if you want to create data groupings, or if you want to display the data in order by fish code, state code, etc. The sort order cannot be changed with the report writer.*

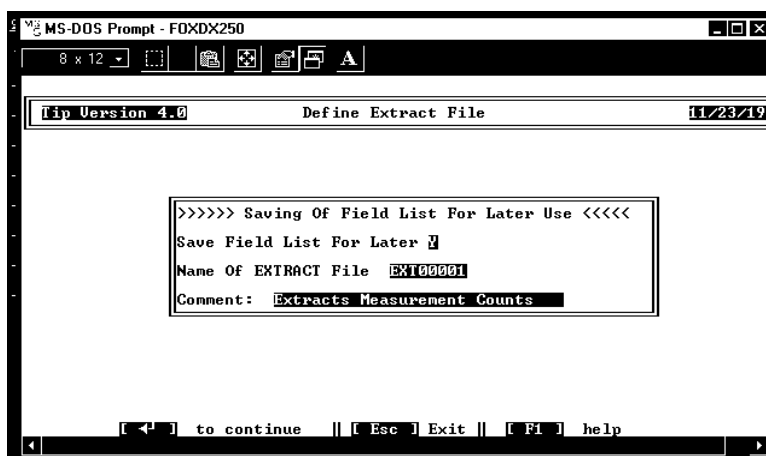
The last three columns allow you to enter values to limit the amount of data to extract. For example, if you wish to display only the data for the Reef Target Fishery, you need to enter the appropriate code "RF" in the "Equal to" column for the field Target Fishery. You may also enter values in the "Greater Than" and "Less Than" columns to limit your extraction file to certain ranges. The selection criteria that you specify will be additive, this means that the data that you extract will match all of the criteria that you specified.

If you leave the "Equal to", "Less Than" and "Greater than" columns blank, data from all of the interviews will be extracted for you.

When you have specified all the information that you want, press the function key [F10] (EXTRACT) to continue.



Next the system will ask you whether you wish to save the field list that you have just created so that you can use it another time. If you type "Y" or press the [Enter] key, you will be able to use the same list at another time. If you were modifying an existing list, you will also be asked whether you want to keep the same name or enter a new one. By entering a new name, you will be able to preserve the original file definition and the one you have just created. After you have typed a new name, the system will give you some space to enter a comment about the file.



The program will then save the file extraction definition and you will be back at the TIP main menu, ready to create the extract file.

RUN EXTRACTION

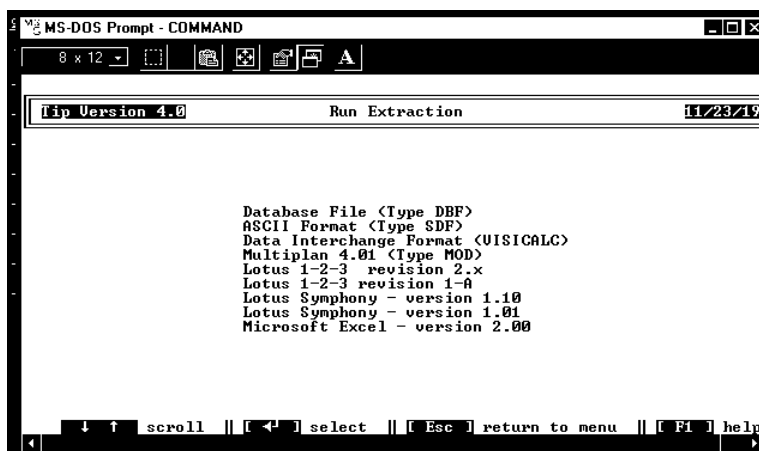
This option extracts data from the TIP data files using file extraction definitions that you have created previously. File extraction definitions are simply lists of fields and ranges of data that can be set up using the Define Extract option of the Reporting Menu.



After you have selected the Run Extraction option, you will see a list of definition files that are available. The comment that appears next to the name will remind you of the contents of the extraction file definition. However, if you are not sure, you will be able to display the fields used in the extract file by highlighting the definition you wish to see and pressing the function key [F4] (see fields). If you wish, you can print the list of fields by pressing the [Ctrl] key and the letter [P].

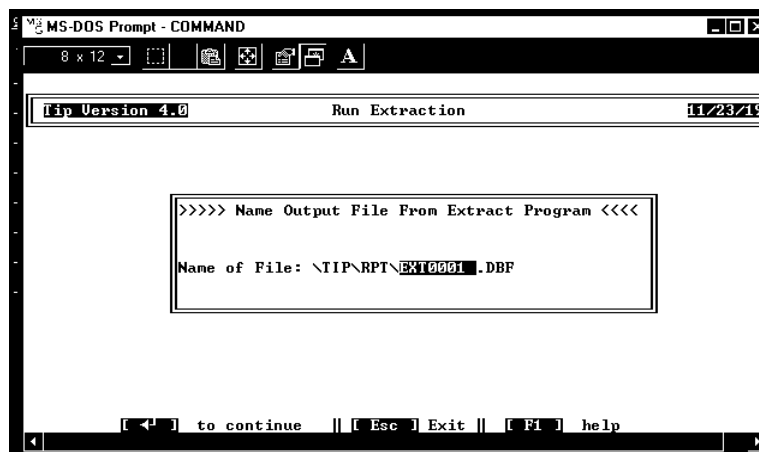


Press the [Enter] key to select the file definition you want to use. A menu will be displayed on the screen from which you can select the format for your extraction file. If the format that you need does not appear on the list, you should select the ASCII Format which can be imported into most word processing, spreadsheet, and graphic programs.



Note: *If you are planning to use the Custom Reporting feature of TIP, you must create a Database File (type DBF).*

After you have selected the data type, you will have to enter a name for the file that you are about to create. Please note that the extension of the file is determined by the format you have chosen for your extract file. The file will be stored in the subdirectory \TIP\RPT on your hard drive.



After you have entered a name, the extract file is created. This may take some time, depending on the amount of data that you have entered and the complexity of the sort order and ranges that you have selected. When the extraction is completed, you will be notified that the data was extracted successfully. To return to the Main Menu of TIP you can press any key.

CUSTOMIZED REPORTING

Selecting the Customized Reporting option on the Reporting menu will enable you to create a report in any format. Before using this option, you must have first created an Extract File Definition and Run an extraction, as mentioned in the above paragraphs. Make sure that you create a file of type Database (DBF) which is the kind of file used to create a report.



A box in the center of the screen will list any reports that you had previously created. If you wish to modify a report, highlight it with the cursor and use the [Tab] key to highlight the word <<Open>> and press enter. If you wish to create a new report, press the [Tab] key until you highlight the word <<New>> and press the [Enter] key.

The screen will display a report layout form.

Note: You may find that using a mouse will make creating reports a lot simpler. A task that requires many key strokes can be accomplished by simply moving the mouse and clicking. However, since the use of the keyboard is less intuitive, the instructions in this section will show the keyboard sequences that need to be used to execute each command.

Report Layout Form

The next screen that you see when you select the Custom Reporting option on the Reporting menu is the Report Layout form. This form will allow you to design the report. You may find it a little intimidating at first, but you will soon realize that it is a very powerful tool.

The first line of the screen is a Bar Menu, very much like the main menu of TIP. The menu will give you access to all of the report writer features.



To make use of the features on this menu, press the [Alt] key. This will activate the menu. You will notice that the first item on the menu is highlighted, "SYSTEM". Also notice that one letter out of every option is highlighted or of a different color. This means that each of these letters is a hot key: you can press the letter while the menu is active and a secondary or Pop Up menu will be displayed.

The next line on the screen has a name with a file extension .FRX. This name is the name of the report that you selected. If you decided to create a new report, the name that appears in this line will read "UNTITLED.FRX". After you have completed the report layout, the system will ask you for a name.

The third line, shows you the status of the report. "R:" and "C:" tell you the row and the column where your cursor is located. The next word on the line indicates the mode that you are in: Move, Text, etc. The last word tells you what part of the report you are working on.

The rest of the screen represents the body of the report. You will actually be able to move columns and text to design the report the way you want it. The body of the report is divided into bands. Each band represents a different portion of the report. The column on the left displays the name of each band as well as the number of lines that are available in each line. When you create a new report with the Custom Reporting feature, you will see three basic bands: PgHead, Detail, PgFoot.

PgHead is the area for the Page Header information. This information will appear on the top of the page and will be repeated on all pages. You may include information such as a title, the date of the report, page numbers, etc.

Detail is the area of the Report Layout form where you specify the fields that appear in the report. This information will form the body of the report.

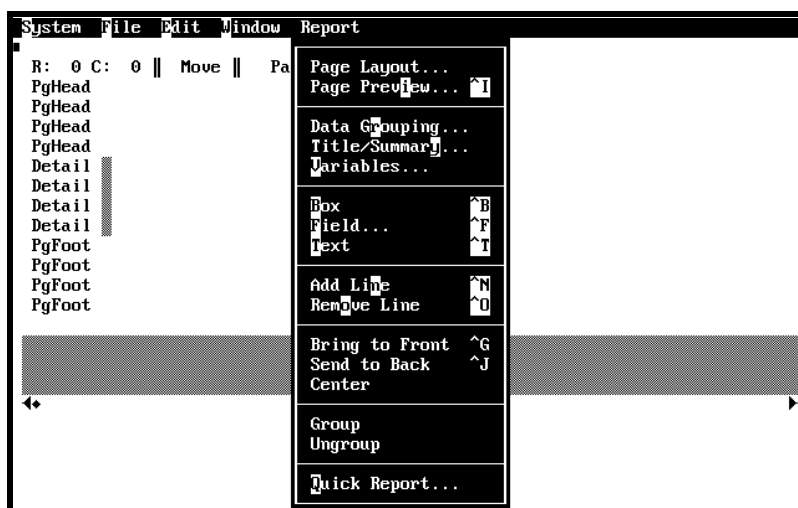
PgFoot is the area where you can specify a Page Footer. The footer information is repeated on every page of the report and may include information similar to that of the header, as well as totals or averages for every page.

You may add additional bands. You can add a band for a Report Title, that will appear only on the first page of your report. You can also specify bands for groups of data (when you want to display data by state, gear or species) and you can create a summary band that will print totals for the entire report and will be printed on the last page only. These bands are added by selecting the Data Grouping and Title/Summary options on the Report menu. Their use will be explained later in this chapter.

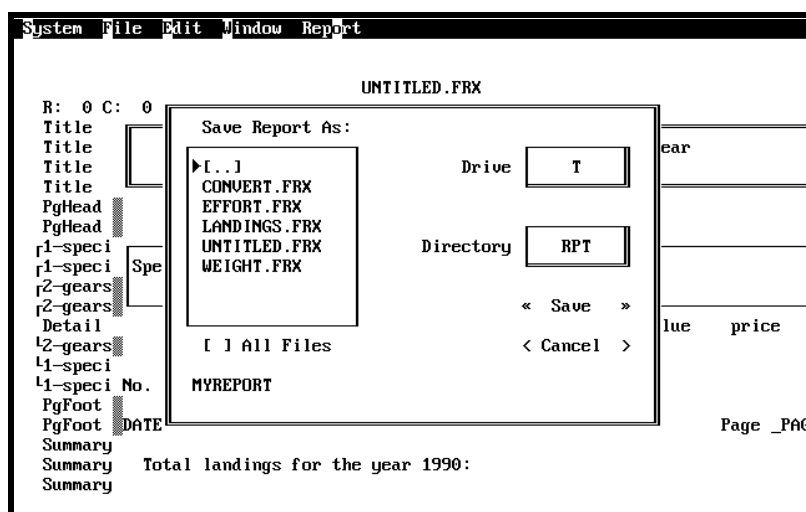
How to create a report

Press the [Alt] key to activate the top bar menu. Highlight the REPORT option on the top bar menu by moving the right arrow. The Report menu has all of the features that are necessary to create a report.

The last option on the Report menu is called Quick Report. Since you had already selected the fields that you wanted on the report when you created an Extract file Definition, Quick Report is the easiest and fastest way to generate a report. To go directly into Quick Report, press the [Alt]ernate key, and the letter [O]. Now press the letter [Q]. The [Alt]ernate key will activate the top bar menu, the letter [O] will activate the Report menu and the letter [Q] will start the Quick Report function.



The program will display a box with the extracted databases that you have created. If there are no names on the list, this indicates that you have not extracted data into a database and therefore you cannot create a report. Select the database that you want to use and use the [Tab] key to move to <<Open>> and press the [Enter] key.



A box will be displayed which will let you select whether you want a Column Layout (the most Common format) or Form Layout. The Column Layout puts the fields in columns and one record per line, while the Form Layout will put each field on a separate line. The selected report layout will be indicated by a dot, in parenthesis, next to the option. A box to the right will give you an idea of what the different formats look like. If there is an X next to the box labelled Titles, the field names will be displayed as titles (column headers or labels) on the report. It is practical to use the Titles option, since you can modify the text in the titles as you wish. The option called Fields, is used to further limit the number of fields that will be used in the report.

Note: The option called Add Alias should be left deselected; an alias represents the name of the file to which the field belongs.

When you are done, highlight the <<OK >> and press the [Enter].

Report Objects

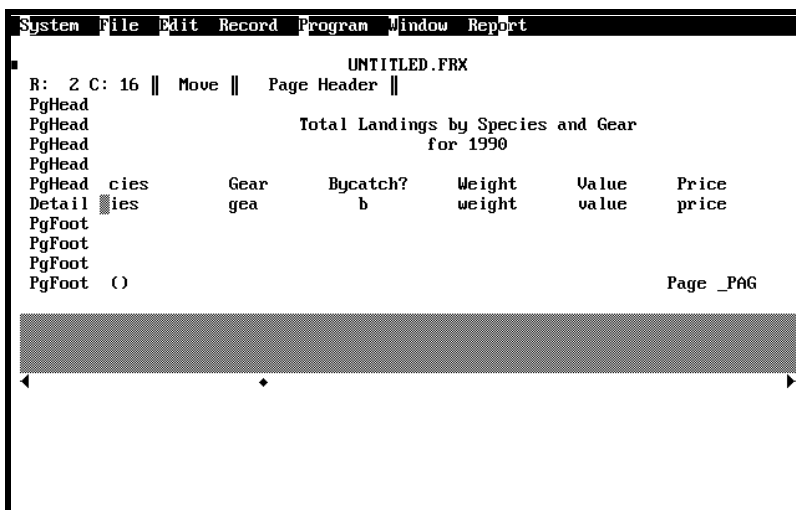
The fields from your extract file will appear on the Report Layout Form in the format you selected. If you had selected the "Title" option, the titles will also appear on the screen. Notice that the titles are the same as the field name. The titles, or column headers appear on the PgHead band. The fields appear in the Detail band. Each title and each field is called a "Report Object". They are referred to as "objects" because by highlighting them or selecting them, you can move them on the screen or modify them. To select one object, position the cursor on the object you wish and press the space bar. You will notice that the object becomes highlighted. To select more than one object, select the first object, and then while pressing the [Shift] key move the Arrow key to the next object you want and press the [Shift] key and the Space bar to select the next object.



There are several things that can be done with objects. If you wish to center them, highlight the object and then press the [Alt]ernate key, and the letter [O] at the same time. A Report window will be displayed. Press the letter [C] for center.

Text Objects

The titles and any other text are referred to as Text Objects. For example, to change the text to display more meaningful titles, move the cursor over the field, and type the new title. Notice that the Status line has changed from "Move" to "Text". The program will consider that you are typing text until you press the [Enter] key, and the status line changes back to "Move". For help in assigning meaningful titles to the columns in the report, please refer to Appendix I.

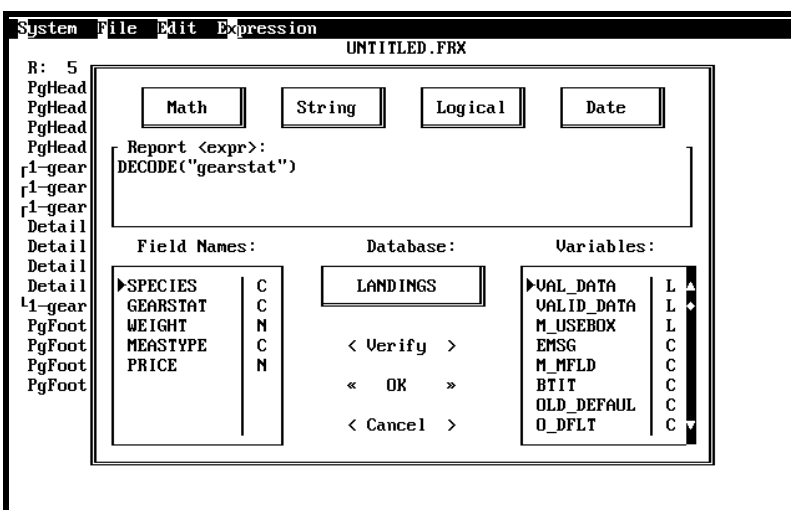
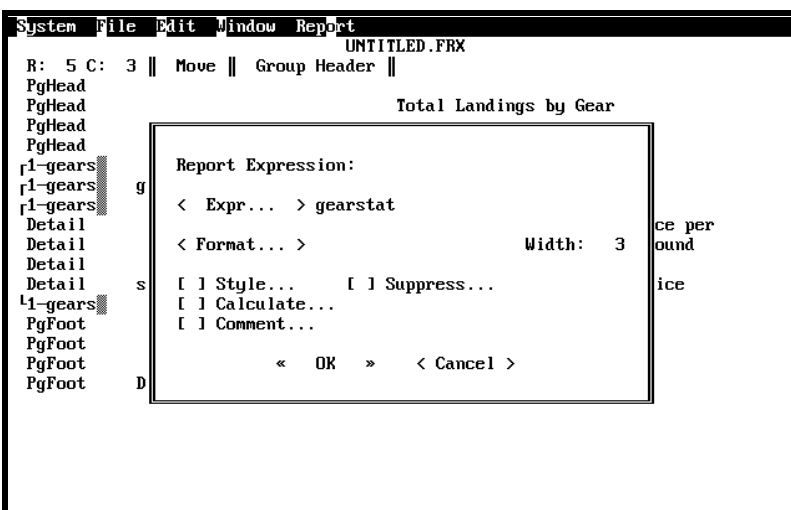


Field Objects

These objects are the field names that hold the information that will appear in your report. If you move your cursor to the field and press the [Enter] key, you will see a screen with options.

If you press the letter [E], a screen will be displayed that will allow you to manipulate the fields. You can also invoke this option by selecting the letter [F] from the Report menu. This allows you to create additional fields with calculated values.

There are several functions that will enable you to convert species codes, state codes, county codes, etc., into their English equivalent.



The available functions are:

SCI: converts the SPECIES code into the scientific name equivalent. To use this function, type the following in the Report:

SCI("species")

COMMON: converts the SPECIES code into the common name equivalent. To use this function, type the following in the Report:

COMMON("species")

LOCAL: converts the SPECIES code into the LOCAL common name equivalent. To use this function, type the following in the Report:

LOCAL("species")

CNTYNAME: converts the COUNTY code into its name equivalent. To use this function type the following in the Report:

**CNTYNAME("areacounty") or
CNTYNAME("sitecounty")**

If you are planning to use the CNTYNAME function to convert the Reporting Area County (AREACOUNTY) field to its actual name, you must also extract the Reporting State (REPSTATE) field when you create the extract file for your report. If you need to convert the Sampling Site County, make sure you extract the field Sampling Site State (AREASTATE).

DECODE: converts all other fields for which there are codes. To use this function, type the following in the Report:

DECODE("fishery")

This will convert the codes for Target Fishery into the appropriate English equivalent. If you wish to convert other fields, replace the word "fishery" with the name of the field that you wish to convert. The names of the fields available for the report that you are creating are displayed in a box to the right of the Report Expression window.

When you use the DECODE function, you must increase the width of the field. For most codes, to include the entire text of the code you should enter a width of 30. If you don't have enough room to display 30 characters, you may make the width smaller and the extra text will simply be truncated. The field width for converting species codes should be 24 characters for scientific names, and 21 characters for common and local common names.



Inserting and Removing Lines from a Report

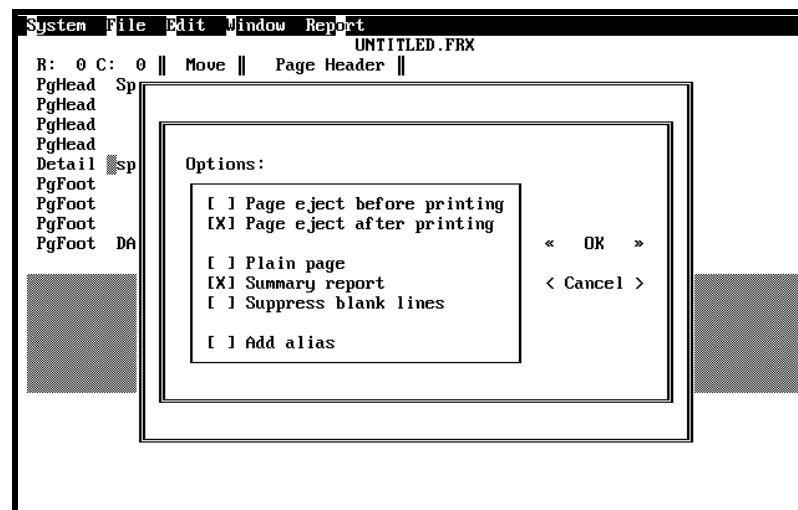
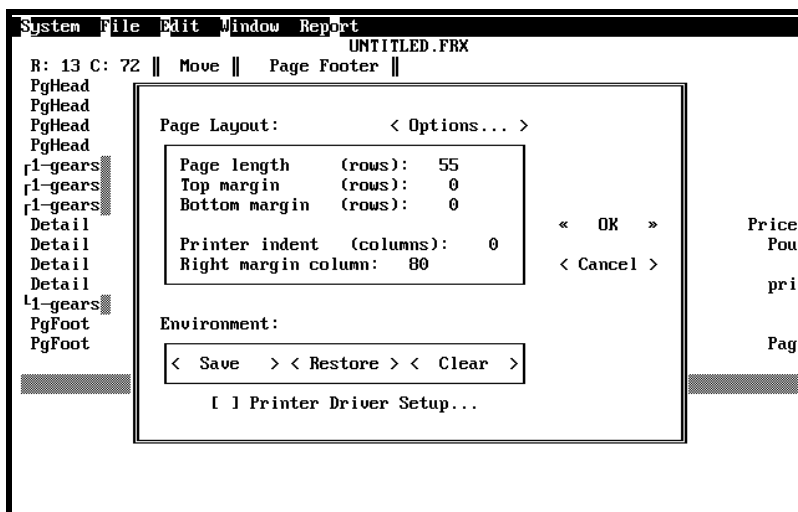
If you need additional lines in any of the bands of the report, press the [Ctrl] key and the letter [N]. The new line will be inserted above the line on which your cursor is located and will be of the same type. Therefore, if you need to add an additional line to the Page Header, highlight a line that has PgHead printed on the left and press [Ctrl] and the letter [N]. To remove a line, you must press the [Ctrl] key and the letter [O].

Changing the Page Layout

The first option on the Report Menu is the Page Layout. With this feature you can specify the page length, top and bottom margins, left margin indentation and right margin column. Although you can print up to 66 lines on an 8 1/2 by 11 sheet, on most reports, especially when using a laser printer will send at least 5 lines of text to the next page, and then eject.

Therefore, it is recommended that you set the Page Length to a value less than or equal to 60. This may vary depending on your printer. If you have a regular dot matrix printer, you may want to advance one page before and after the report is generated to be sure that the printing starts at the top of the page.

To do this, select Options: by pressing the letter [O] and then choosing "Page eject before printing" and "Page eject after printing". If you are using a laser printer, you should deselect "Page eject before printing" to prevent a blank page from printing before your report and select "Page eject after printing" to eject the last page of your report.

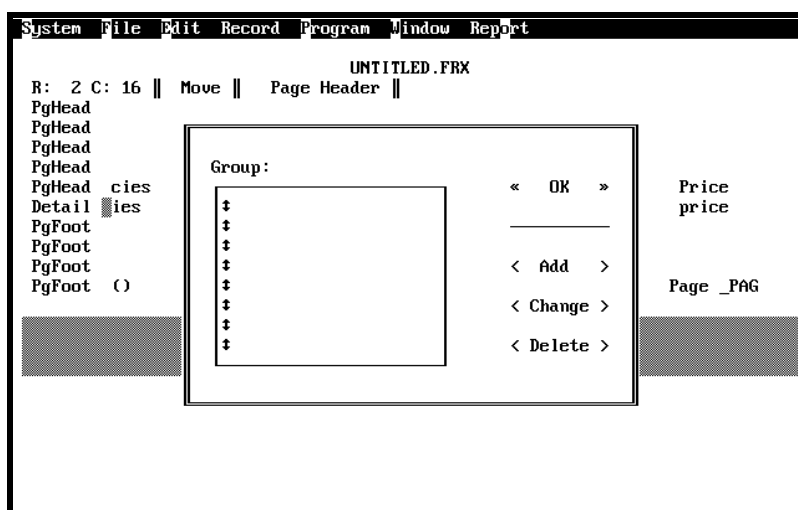


Grouping Data

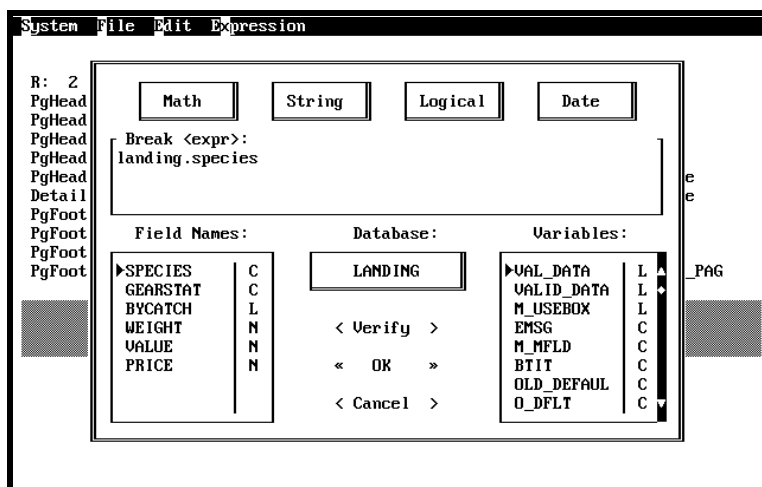
In certain reports you may want to group data to obtain totals or averages by gear, county, species, etc. To do this, you must use the Data Grouping... option on the Report menu.

Note: To create groups of data it is critical that you order the data properly when you create the Extract Definition File. For example, if you wanted to create a report that printed total pounds landed by species and by gear within species, when you create the Extract Definition File you should enter a 1 for Species in the "Order by" column and a 2 for Gear. This would create a file with the data ordered by Species and by Gear within Species.

To create a group of data, select the Data Grouping... option on the Report Menu. You will see a screen with the buttons Add, Change and Delete. Select the Add button to create a group of data.

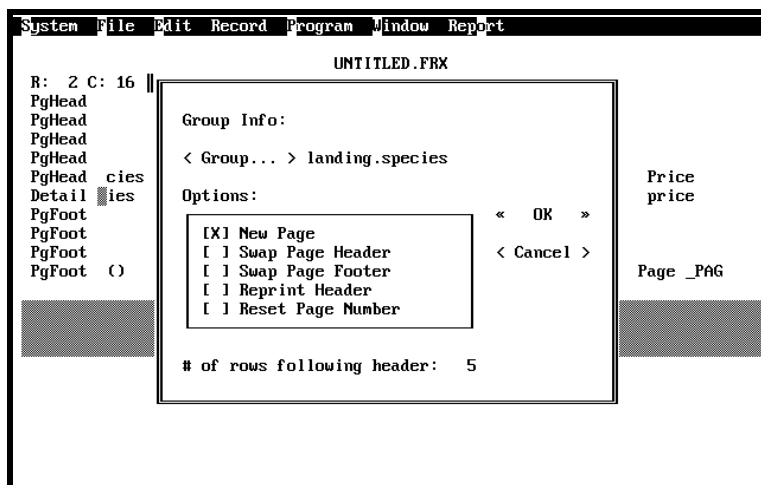


The next screen will allow you to specify information about the group you wish to create. Select the Group option to display the next screen. In a box to the left of the screen, you will see displayed the fields that you selected when you created the Extract Definition file. Type the name of the variable that you wish to group, for example SPECIES, in the box labelled "Break <<expr>>". The name that you type in this box must match the field name exactly.



If you use a mouse, you can simply click twice on the desired field name and it will be copied into the "Break <<expr>>" box for you. Once you have entered the name of the field, you may select <<OK>> to exit this screen.

There are a number of options that are associated with creating a report group.



These options are:

New Page: If this option is selected (an X appears between the brackets) every group will print on a new page. If you were grouping the data by species, every time the species changed, the information for the next species would appear on a new page.

Swap Page Header: As with "New Page", when this option is selected, the new group begins printing on a new page. However, the Group header prints at the top of the page instead of the Page Header.

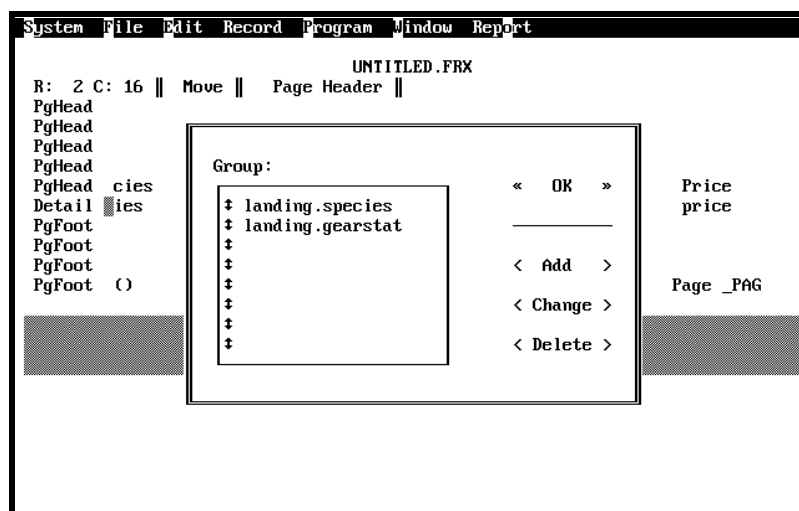
Swap Page Footer: Checking this option also begins printing on a new page every time the group changes, and the Group Footer appears at the bottom of the last page of the group instead of the Page footer

Reprint Header: Select this option if you want the group header to appear at the top of each page in the group. Otherwise, the page header will be printed.

Reset Page Number: This option will change the page number of the report back to 1 whenever the group changes, and will begin printing the next group on a new page.

of rows following header: Enter the minimum number of lines with data that should appear after the group header. If the number of blank lines at the bottom of a page is less than the number you specified, the header will print on the next page to avoid leaving the header at the bottom of the page with the data printed alone on the following page.

Once you have entered all desired options, you may select <<OK>> to return to the "Group" screen where the group you have just created will be listed. Choose <<OK>> again to return to the report layout form. You will notice that additional bands appear on the left hand side of the report form. This band shows you the group level and the field that is used to form the group. For example, if the first group you created was the species group you would see displayed "1-speci" to indicate that your mayor group is species.



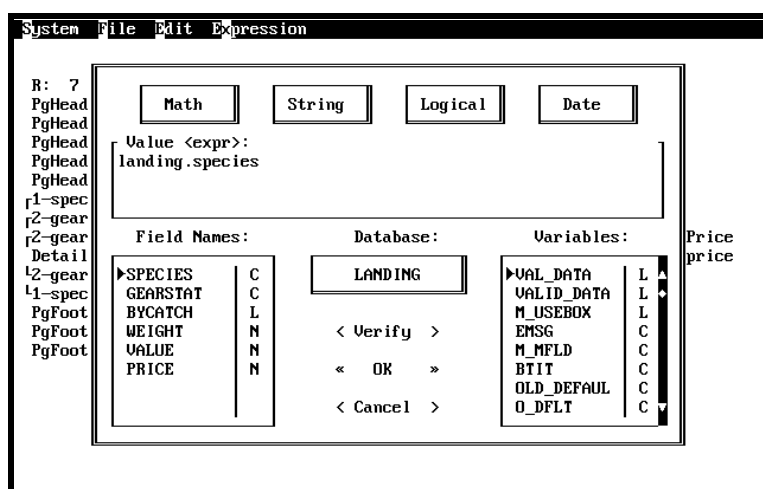
You may decide to move the field on which you are grouping your data to the group band so that it displays only once at the beginning of each group. You may add additional bands to include column headers for each group. You may also include information on the footer.

Variables

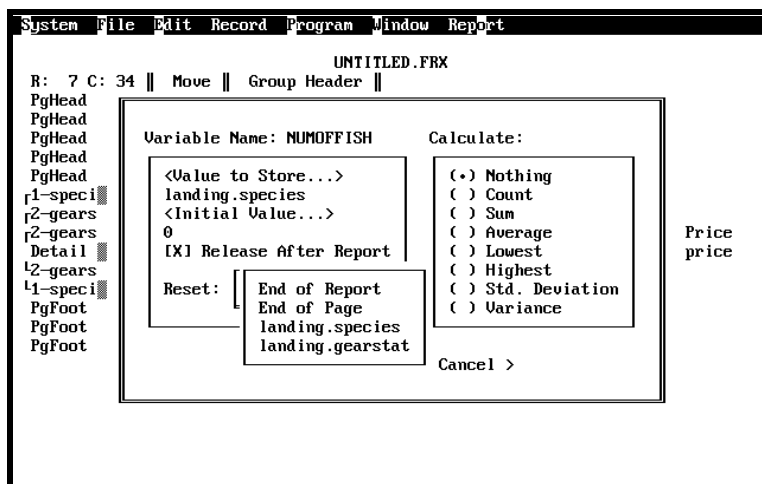
This option will allow you to create new variables to store and print totals, averages and other computations. To create variables, use the Variables... option on the Report menu.

The next screen displayed is the "Variables" screen. Select Add to define the new variable. The variable definition screen will allow you to name the variable, decide when it should be reset and what kind of calculation you would like to perform.

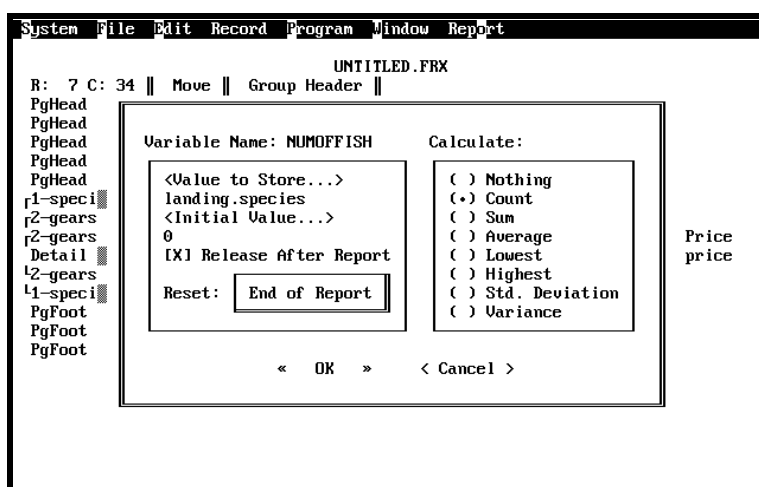
Enter next to "Variable Name" the name of the variable you wish to create. The name can be 10 characters long. Next, choose the "Value to Store" option to display the Value box. The box on the bottom left of the screen displays the list of variables that you selected with the Extract Definition File. Select the field that you wish to compute by either typing in the name or using the mouse. For example, if you wanted to calculate the total pounds landed, you would select the field labeled weight.



You may also assign an initial value to the field that you are creating. Usually this value will be set to 0.



You can reset the value of the variable at the end of the report, at the end of the page, or whenever the group changes. To choose one of this options, select the Reset option and press the [Enter] key to display the reset options that are currently available. Notice that every field that you have used to create a group appears on the list.



You can specify the type of calculation that you wish to perform by selecting one of the operations listed in the box labelled "Calculate".

You can perform the following calculations:

Nothing: No computation will be performed.

Count: Counts the number of times the variable appears in the report.

Sum: Sums the values of the variables.

Average: Performs the arithmetic mean of the variable values.

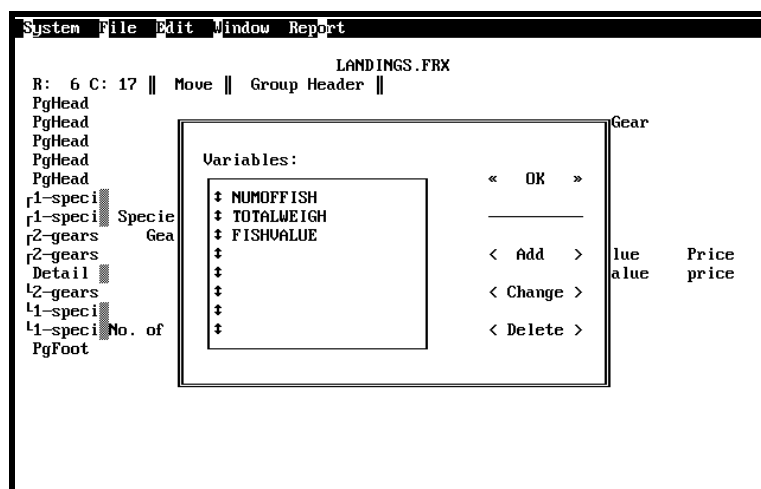
Lowest: Finds the minimum value of the selected field.

Highest: Finds the maximum value of the selected field.

Standard Deviation: Calculates the square root of the variance for the values of the variables.

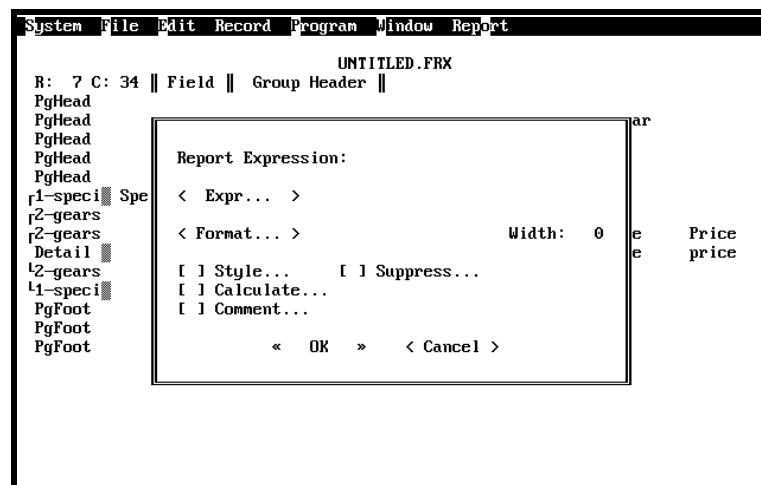
Variance: Measures the degree to which the value of a field varies from the average of all the values.

When you have selected the calculation you wish to perform, select <<OK>> to return to the Variables screen. You will see that the variable you created is included in the list. You may create additional variables by selecting Add or return to the report form by selecting <<OK>>.



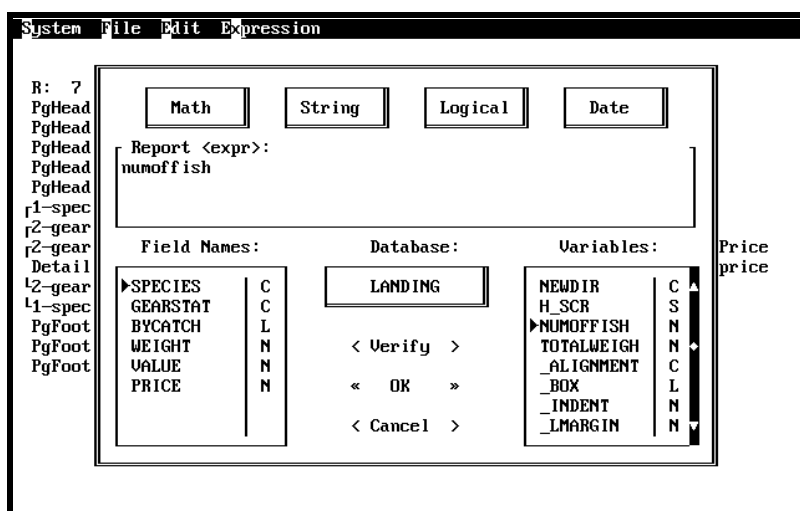
How can I include in the report the variables that I just created?

To include the variable in your report, select the Field... option on the Report menu. Select Expr... in the Report Expression box. The cursor will be blinking in the box labelled "Report <<expr>>". You can type the name of the variable in this box. If you are not sure of the spelling of the variable, you can look in the box that is located on the bottom right of the screen labelled "Variables:".



There are many variables in the list, and they are not in any particular order. Once you have entered the name of the variable, you can select <<OK>> and you will see the Report <<expr>> box again. In this box you can change the width of the field and enter a comment that will remind you of the contents of the field.

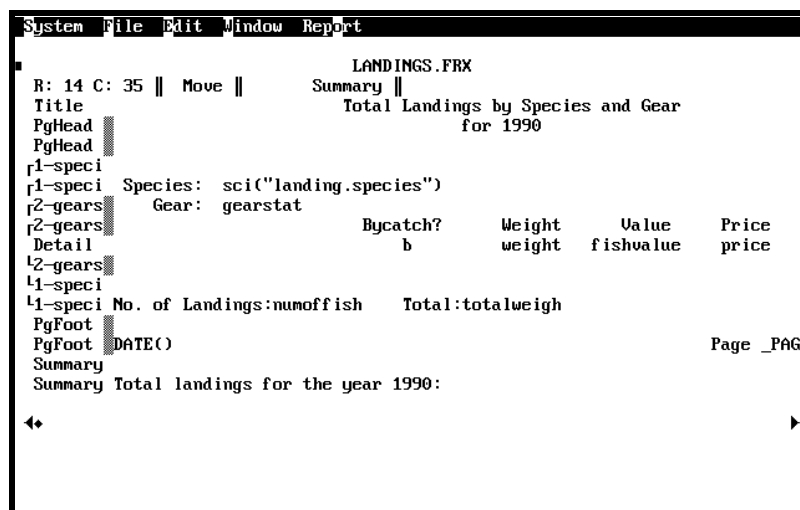
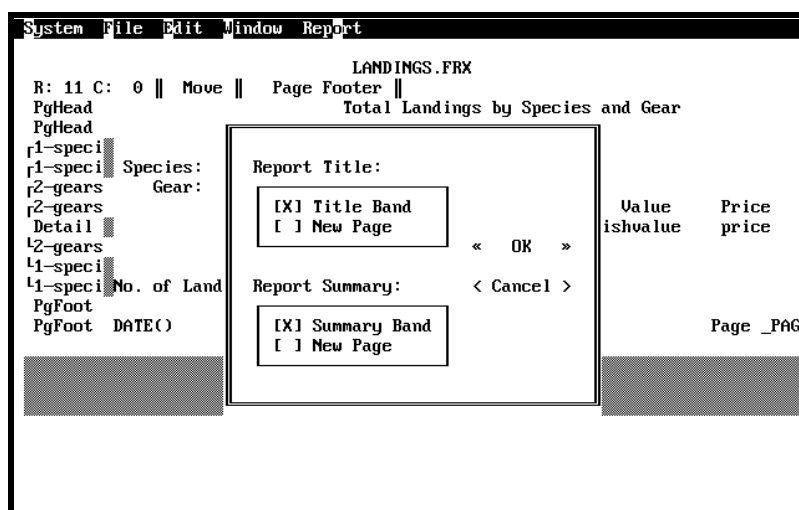
You will see that the field now appears on the report form and you can move it to its proper place on the report. You may also add text labels next to it to identify the contents in the report.



Adding a Title or Summary Information to a Report.

If you wish to add a title and summary information to your report, select the Title/Summary... option on the Report menu.

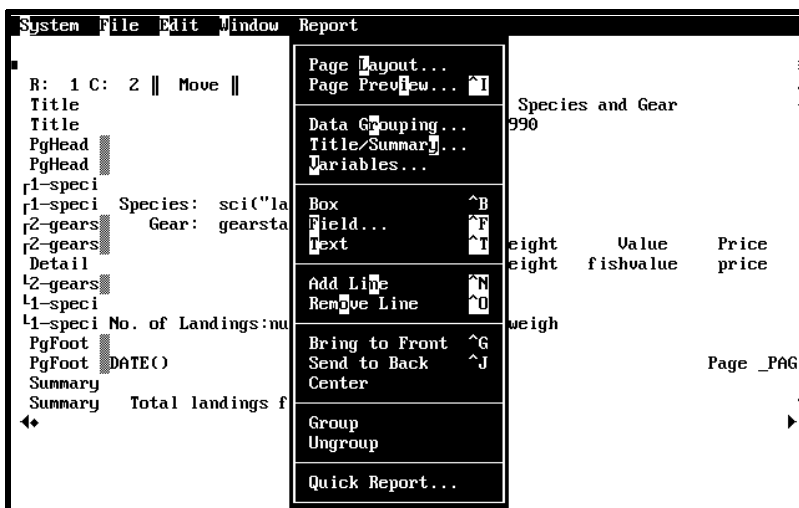
This option will allow you to add a Title band to the report layout form by selecting the Title Band option. The option is selected when an X appears between the brackets. Remember that the Title information appears only one at the beginning of the report. If you select "New Page", the title information will be displayed on the first page and the report itself will be printed starting at the beginning of the second page. You may also add a band to include summary information to the report. This information will appear only at the end of your report. If you select "New Page", the summary information will be printed on a new page. Once you have made your selections, choose << OK >> to return to



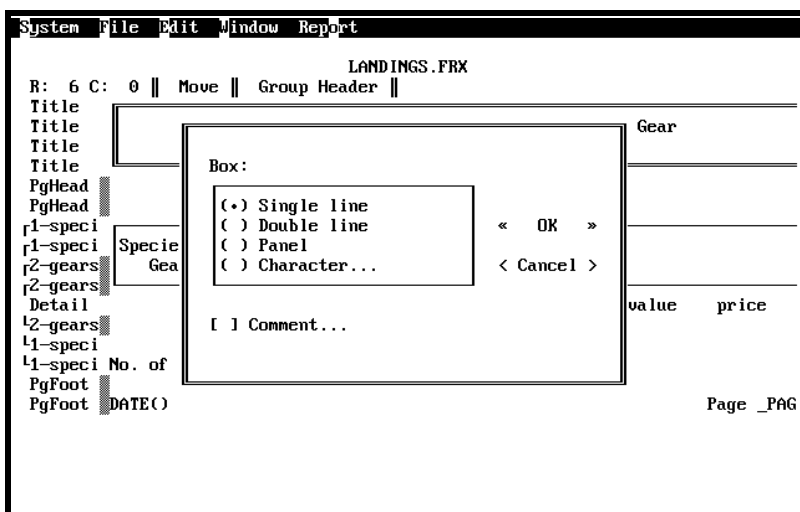
the report layout form. If you selected to add a title to the report, the column on the left will have a band called "Title" at the top. If you selected to add a summary band, the word "Summary" will be displayed at the bottom of the column. You can then include any variables that you created in the summary band, as well as any text.

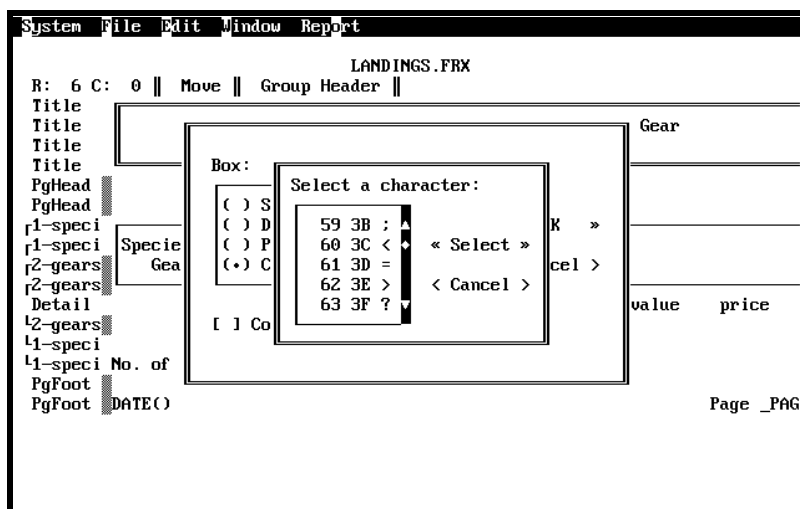
Adding boxes to your report

To print boxes or lines around text select the Box option on the Report menu or press the [Ctrl] key and the letter [B]. Notice that a small blinking box appears on the screen. While the box is blinking you can increase its width and length by moving the arrow keys. When you are done, press the [Enter] key and the box will stop blinking. If you later need to move the box to a different location on the report, you may press the [Shift] key and the [Space] bar to highlight the box and then use the arrow keys to move it to its new location. If you need to change the size again, simply press the [Ctrl] key and the [Space] bar and use the arrow keys to adjust the size. Press the [Enter] key to remove the highlight.



You may choose to use as a border for the box a single or double line, or you may select any character that appears on the list. You may also add a comment to remind you of information inside the box. To do this, place the cursor anywhere on the box you have just created and press the [Enter] key to display the "Box" screen.

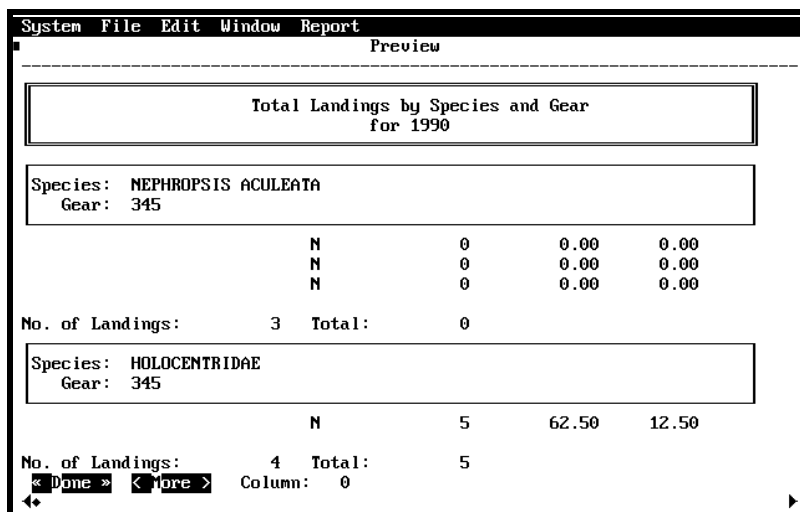




Note: The box is printed using a graphic character to represent the box. Some printers cannot print such characters and interpret the lines of the box as a series of As, Ms, E, Is, dots or accents. If this happens when you print your report, check with your printer manual to see if it can be set to print graphical characters. In some printers, this type of printing is referred to as IBM Character set. If your printer cannot be changed to print the graphical characters, you can change the "character" that is used to create the box in the report writer as described above. Your best choices for boxes would be the = sign or the underscore (_), which you can also use to underline.

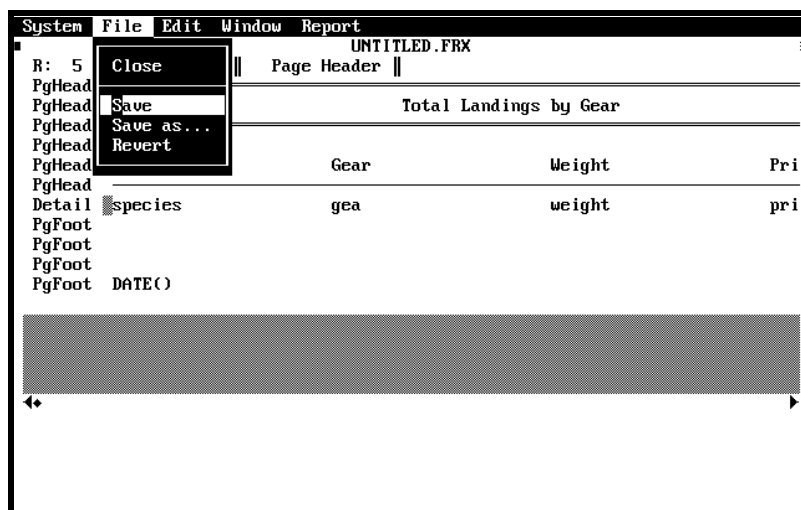
Reviewing your Report Before Sending it to the Printer

By selecting the Page Preview report you will be able to see what your report will look like before you send it to the printer. To see all pages of the report press the letter [M] and the text will be displayed in the format you selected. You may also use the [PgDn] key. You will only be able to page forward to view the report. When you are finished reviewing your report, press the letter [D] or the [Esc]ape key.

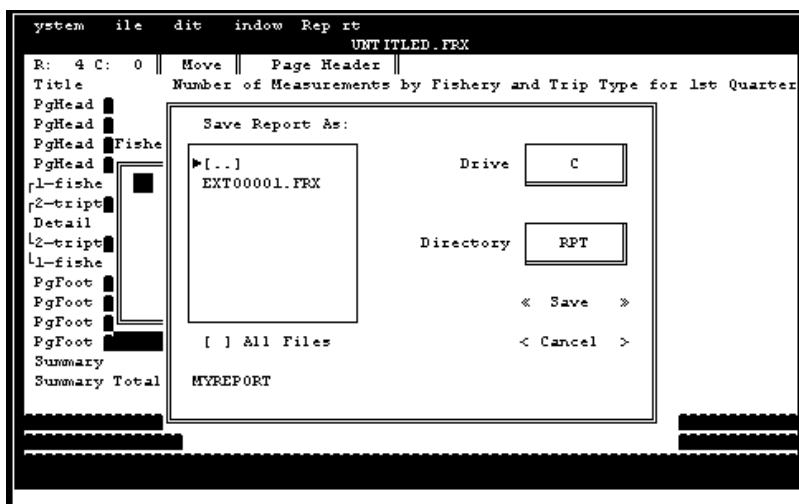


Saving the Report Layout

Once you are satisfied with the report layout, you are ready to save it. Press the [Alt]ernate key to activate the top menu bar and press the letter [F] to activate the File menu. Select the Save option by pressing the letter [S].



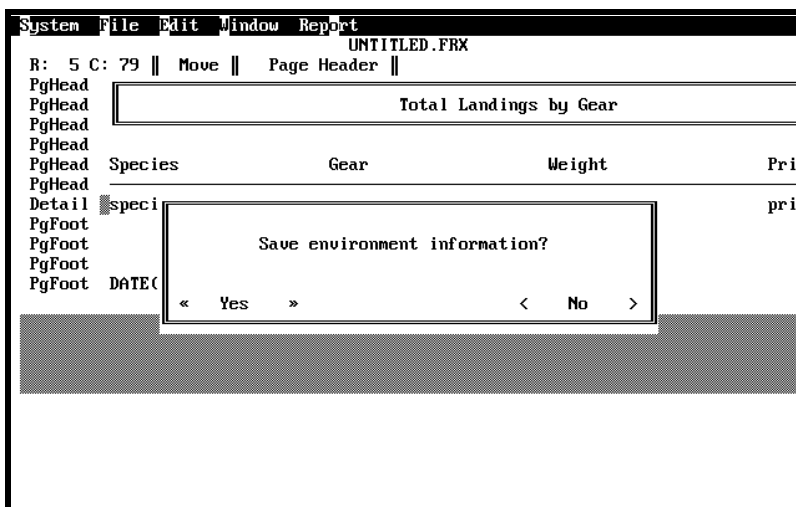
Type the name of the report. The name should be only eight characters long and should not have an extension. The report format will be saved in the directory \TIP\RPT with an extension FRX.



After you are done, use the [Tab] key to move to the << Save >> button and a message asking you whether you want to save environment information will be displayed.

@NOTE = Note: You must answer Yes to this question. You answer yes by pressing the [Enter] key or pressing the [Y]. If you do not save this information, the report will not print.

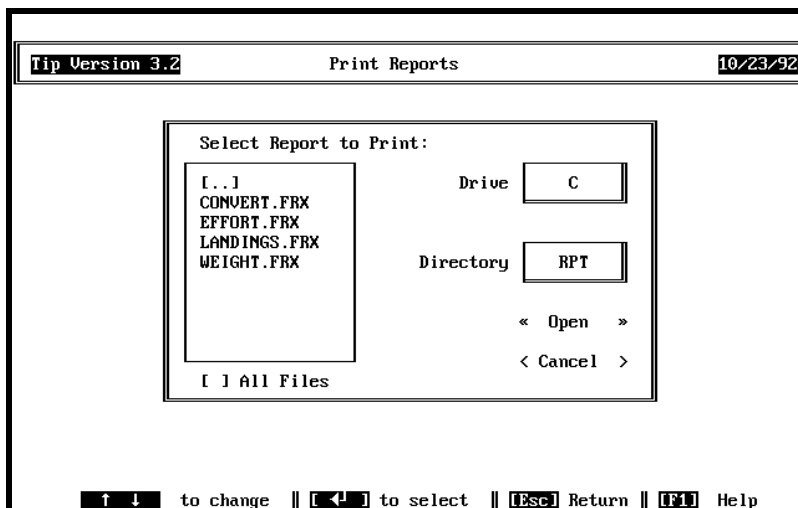
After you have saved the report, you can press the [Esc]ape key to return to the main menu of TIP.



PRINT REPORTS

After you have created a report layout using the Custom Reporting option of the TIP main menu, you are ready to print it. You can print any report at any time after it has been created. Select the Print Reports option from the Reporting option of the TIP Main menu.

A box with all of the reports that you have created will be displayed. Move the cursor until you highlight the report that you wish to print and press the [Tab] key to highlight <<Open>> and press the [Enter] key. A message indicating that the report is printing will flash on the screen. When the report has finished printing, you will be back at the main menu.



Note: *If the report you wish to print is more than 80 columns wide, it will be printed in compressed form (17 characters per inch) If your printer does not print in compressed mode or you have a 132 column printer and would prefer to print your report using wide paper, please call Lee Weinberger at (305) 361-4287 for instructions.*