3-3 Renewal of data

3-3-1 Editing the Shape of Mangrove sub-compartment

The "Feature" tool is used to add, change, or delete mangrove sub-compartment. Select "Mangrove Sub-Compartment" from the "Edit" submenu found in the "Document" menu to show the "Feature" tool. The number of editing tools in the Feature Tools window is shown below.

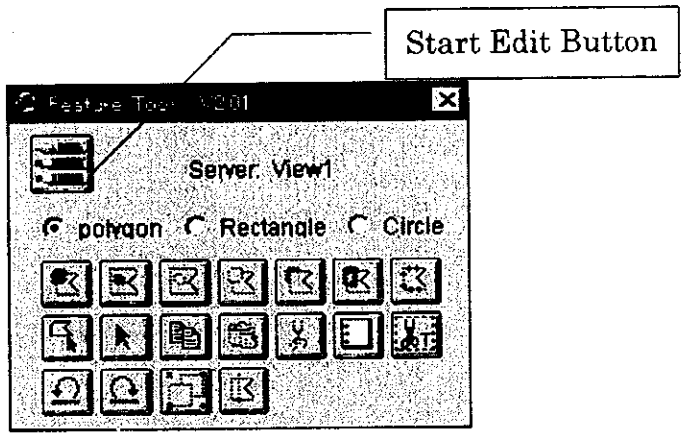


Figure 3-21 Press the Edit icon to start editing features.

The mangrove theme automatically becomes active at startup. Clicking on the "Edit" icon changes the appearance of the window to that shown in Figure 3-22. A dotted line appears around the items that can be edited and shows that the theme is in edit mode.

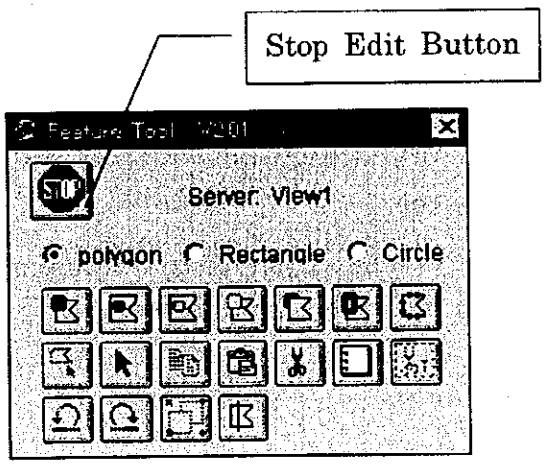


Figure 3-22 Press the "Edit" icon again to stop editing features.

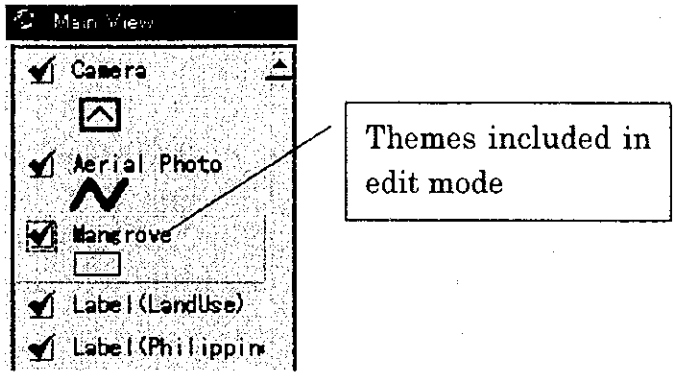


Figure 3-23 The Edit Mode window.

When using the "Feature" tool, if the screen goes white or you can no longer write anything, select "Redraw Display" from the "Display" menu. You will be able to continue after the display has been redrawn.
The land area of mangrove polygons is automatically recalculated when editing has been completed although during editing the area is shown as 0.

(1) Adding Mangrove sub-compartment
The following buttons are used for adding mangrove sub-compartment.

Free Insert Button

After selecting this button, you can freely create the shape of polygon you desire. The new polygon will be placed on top of existing polygons. This button allows you to locate polygons anywhere.

Locate Inside Button

After selecting this button, you can create a polygon inside an existing polygon. Although the new polygon will be placed on top of existing polygons, if the new polygon is not inside or bordering an existing polygon then it cannot be created.

Insert Behind Button

After selecting this button, you can freely create the shape of polygon you desire. The new polygon will be located behind existing polygons. The new polygon can be located anywhere. This function is useful when you want to fill in areas which have holes taken out of them.

Donut Polygon Button

After selecting this button, you can create the shape of polygon you desire. The new polygon will be located on top of existing polygons. If existing polygons are completely covered by the new polygons, then they will need to be relocated on top of the new polygon. This function is useful when you want to locate shapes between polygons.

The following is an example of adding polygons.

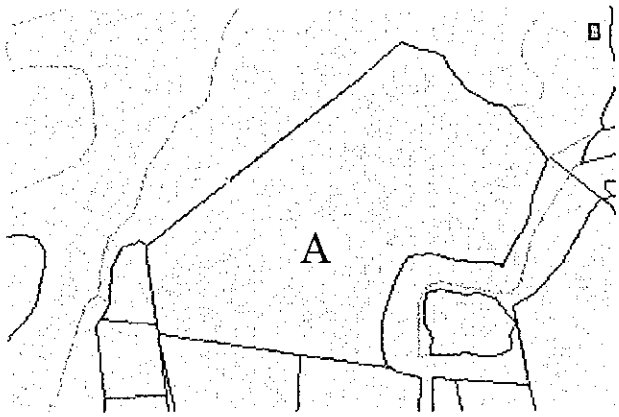


Figure 3-24 The area to which the new polygon is to be added is chosen.

An area of mangroves (A) is located as shown in Figure 3-24. We want to add a new area of mangroves next to the existing area. As we want to use the borders of the existing polygon, we select the "Insert Behind" button. We then draw the new polygon as shown in Figure 3-26, overlapping the existing polygon A.

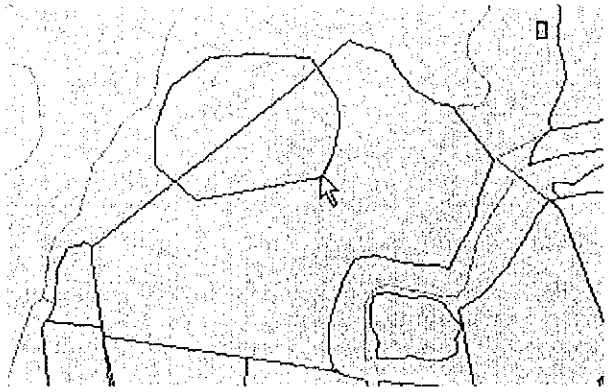


Figure 3-25 The new polygon is drawn overlapping the existing polygon A.

After the new polygon has been drawn, double-click the polygon to complete the process. The part of the new polygon that overlaps the existing polygon is automatically deleted leaving the modified shape of the existing polygon.

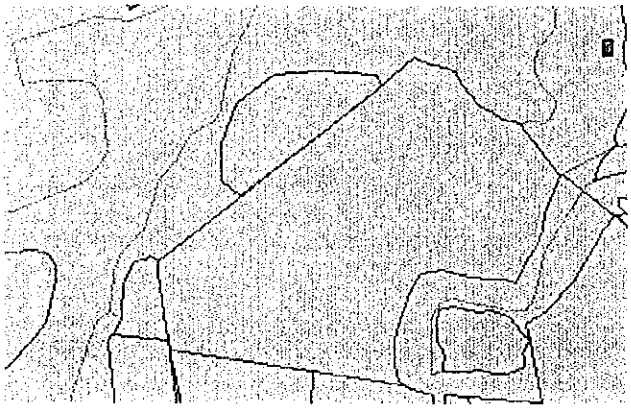


Figure 3-26 The overlapping area is automatically deleted leaving the modified existing polygon.

The process for adding a new area of mangroves on top of an existing area is basically the same. The "Free Insert" button is selected and the new polygon drawn on top of existing polygons as shown in Figure 3-27.

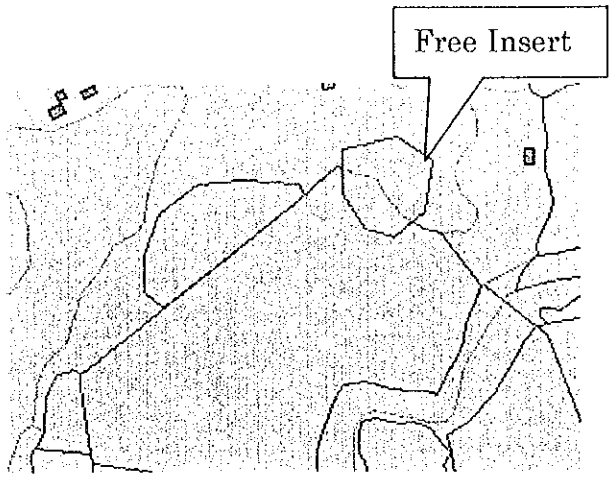


Figure 3-27 The new polygon is located on top of existing polygons.

After you have completed this operation, exit from edit mode. For information on how to input attribute data please refer to the "Input of Mangrove Attribute Data" section.

(2) Cutting Mangrove sub-compartment
The following buttons are used for cutting mangrove sub-compartment.

Internal Cut Button

After you have selected this button, you can freely create a new polygon inside an existing polygon. The new polygon is used to delete an area from within existing polygons. If the new polygon is not inside or bordering an existing polygon then it cannot be created.

Free Cut Button

After you have selected this button, you can freely create a new polygon. The new polygon is used to delete an area from within existing polygons. As polygons can be created anywhere existing polygons can be freely cut.

The following is an example of cutting.

When cutting inside existing polygons, select the "Internal Cut"

button. If you try to create a new polygon on top of an existing polygon then you will get the following error message.

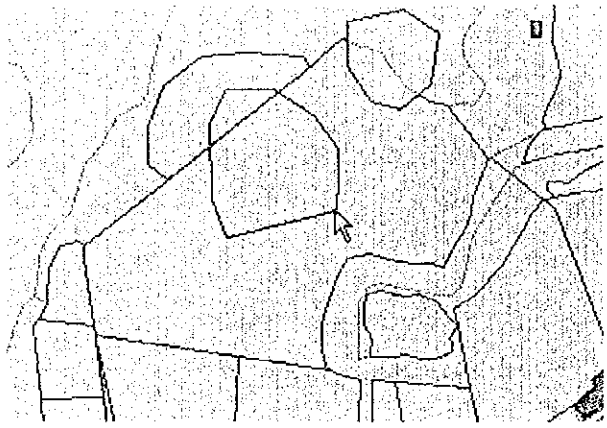


Figure 3-28 A polygon is created on top of an existing polygon.

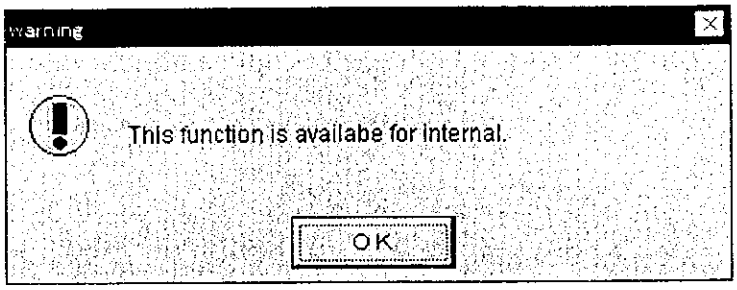


Figure 3-29 This error message will be displayed if you try to create a new polygon on top of an existing polygon.

If you use the "Free Cut" button, you will be able to create a polygon and cut anywhere.

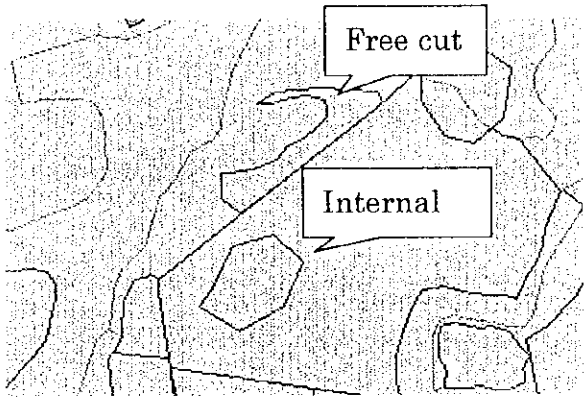


Figure 3-30 An example of a free cut and an internal cut.

Although you can cut parts of polygons when using the "Free Cut" button, it is impossible to cut the entire area. If you want to delete the whole area, use the "Remove" button.

(3) Deleting Mangrove sub-compartment

The following buttons are used for deleting mangrove sub-compartment.

Point Button

After you have selected this button, click on the polygon you want to delete and black dots (handles) will appear around the polygon. Hold the "Shift" key down and click on other polygons to select more than one polygon. Clicking on an area where there are no polygons will cause all previously selected polygons to be deselected. Use this method to select polygons in order to carry out any other kind of operation on polygons.

Remove Button

After selecting the polygons you want to delete, use this button to delete them.

The following is an example of deleting.

The area of mangroves to be deleted is selected.

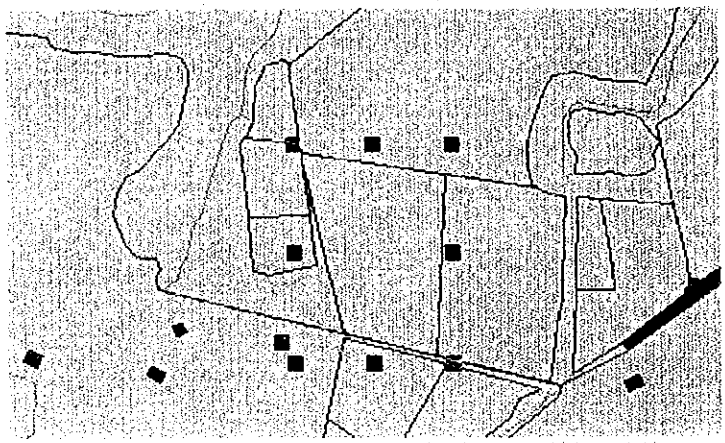


Figure 3-31 Select the area of mangroves to be deleted.

Press the remove button to delete the selected polygons.

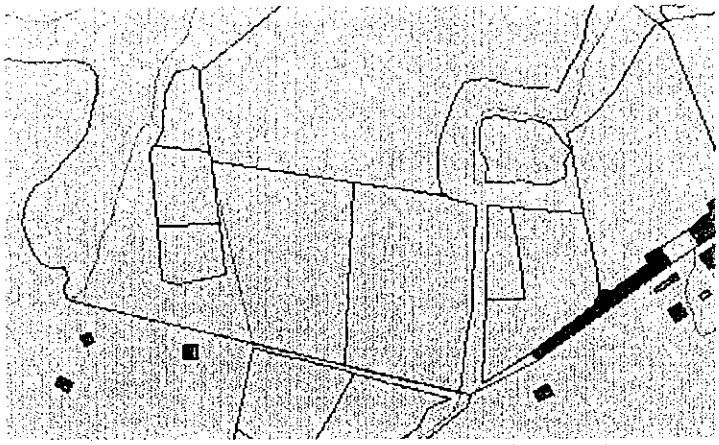


Figure 3-32 Press the remove button to delete the selected polygon.

If you have deleted a polygon by mistake, press the "Undo" button to restore it.

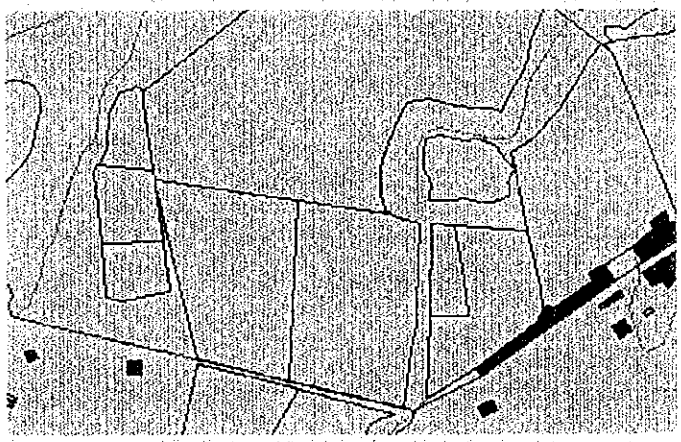


Figure 3-33 Press the undo button to restore the deleted polygon.

Undo Button

(4) Making Changes to the Boundaries of Mangrove sub-compartment

The following buttons are used for making changes to the boundaries of mangrove sub-compartment.

Vertex Edit Button

Select the Vertex Edit Tool and then click on a polygon to display vertices. As multiple vertices are displayed on rounded polygons, it may be difficult to select a single vertex at a later stage.

The following is an example of changing the boundary lines of mangrove sub-compartment.

When moving the boundary line between two mangrove sub-compartment, after clicking on the "Vertex Edit" button, click on the boundary line.

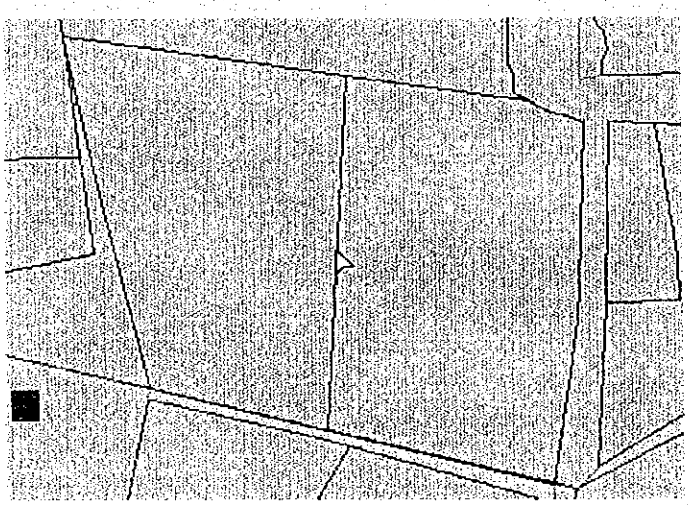


Figure 3-34 Click on the boundary line between two mangrove sub-compartment.

A hollow, square vertex handle will appear at each vertex and you will be able to freely move the line.

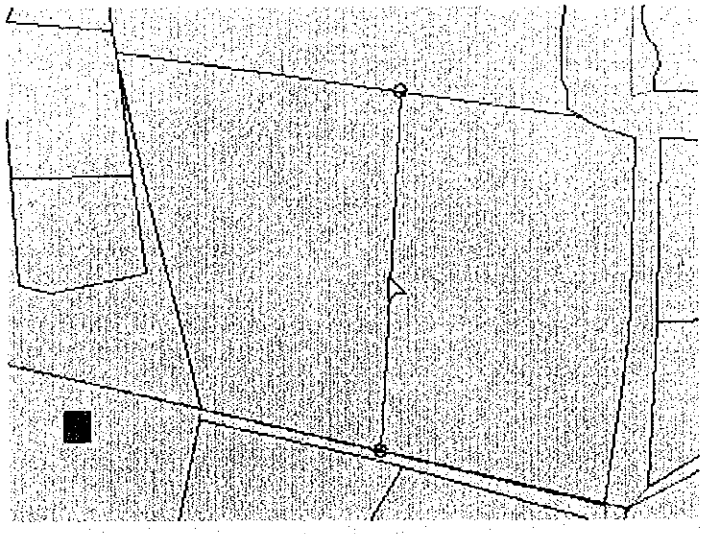


Figure 3-35 A hollow, square vertex handle will appear at each vertex.

Although we want to move the boundary line between polygon A and polygon B, as the boundary line is a straight line, there are no vertices other than the ones at each end of the line, which means that only those two points can be moved. In such a case, if you want to move the line in other directions you must first create another vertex somewhere else on the line. Select the "Add Vertex" button and move the cursor to the point on the line where you want to create the new vertex.

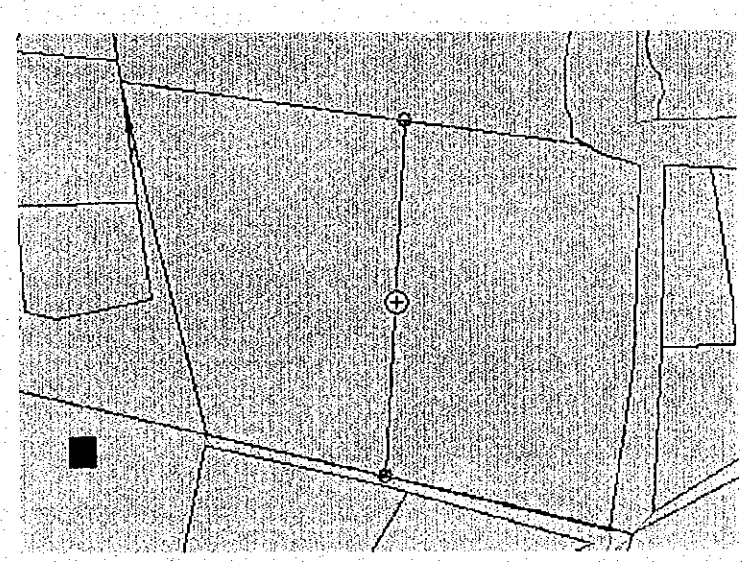


Figure 3-36 Move the cursor to the point on the line where you want to create the new vertex. The cursor will appear as a crosshair.

Click on that point to create a new vertex.

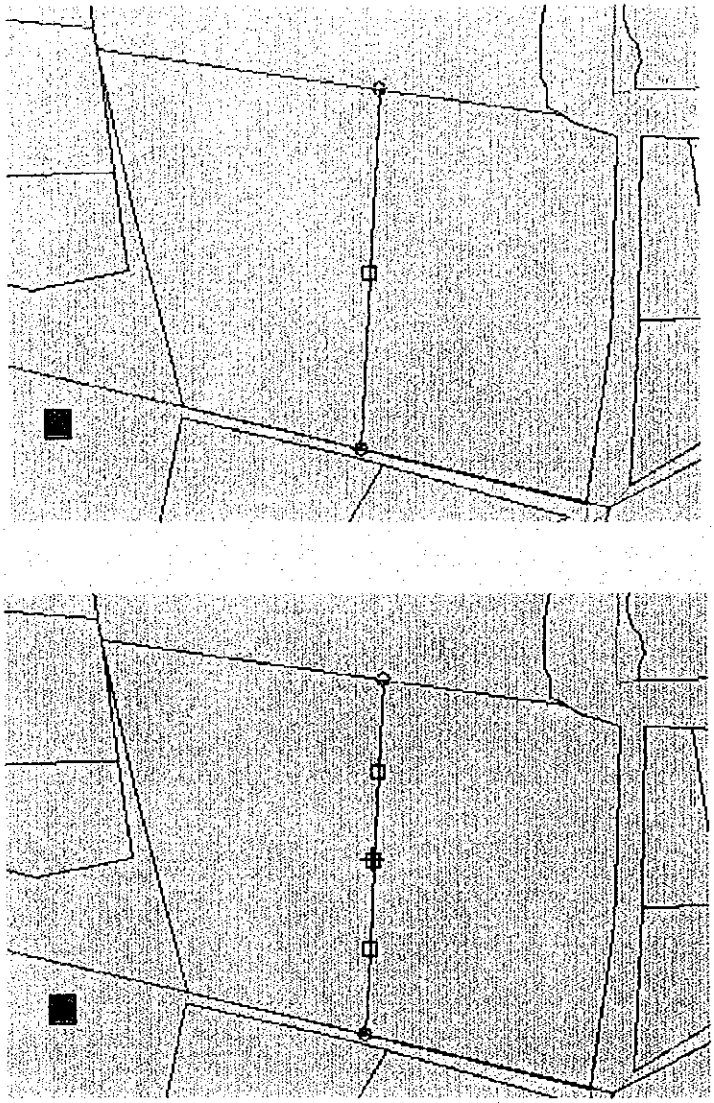


Figure 3-37 Place the cursor on the vertex you want to move. The cursor will appear as a crosshair.

After adding the necessary vertices you can then move the line to create the shape you want. Place the cursor on the vertex you want to move. The cursor will appear as a crosshair.

Hold down the left mouse button and drag the vertex to the new position.

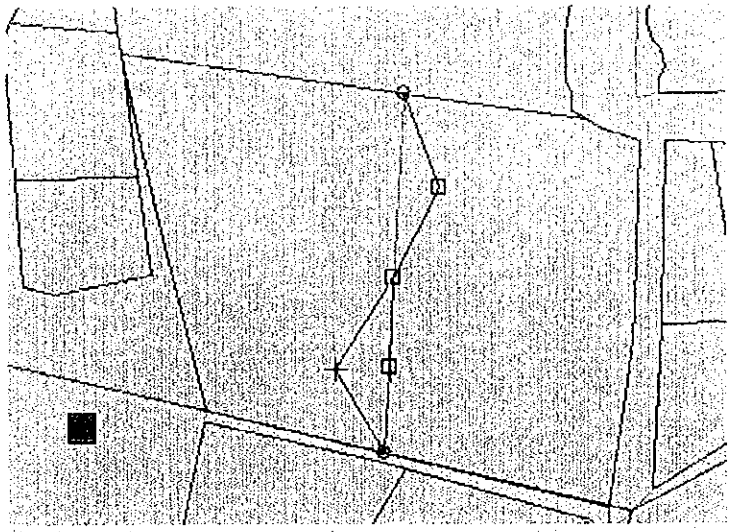


Figure 3-38 Hold down the left mouse button and drag the vertex to the new position.

(5) Input of Attribute Data for the Mangrove sub-compartment

The Forest inventory Display dialog box is used to input new attribute data or to make changes to existing attribute data for the mangrove sub-compartment.

Mangrove Attribute Display Button

This button is used to display or make changes to forest inventory data linked to mangrove sub-compartment or to input new attribute data. After checking that the mangrove theme is active, select the area of mangroves you want to work on.

The following is an example of inputting new attribute data for mangrove sub-compartment.

After clicking on the "Mangrove Attribute Display" button, click on the area of mangroves you want to work on.

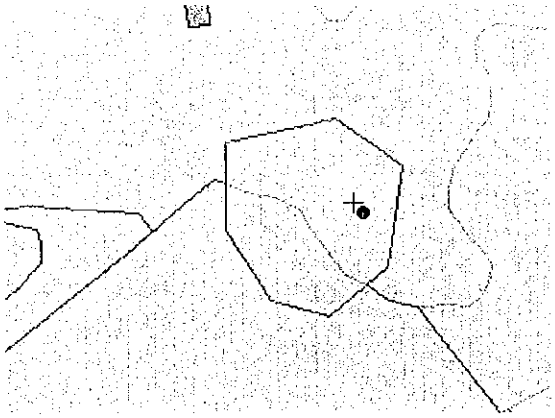


Figure 3-39 Click on the area of mangroves you want to work on.

The attribute window will be displayed and you can then input or change data.

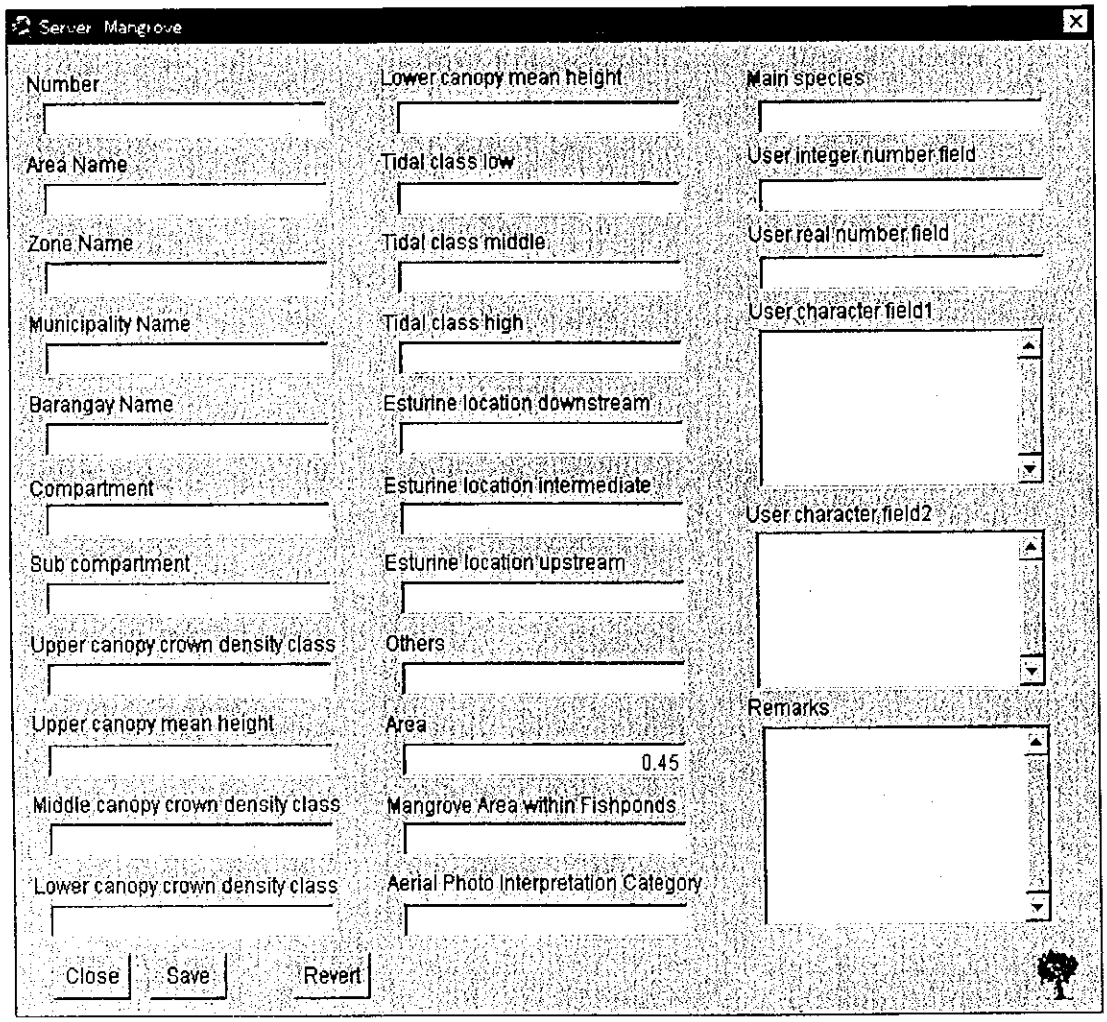


Figure 3-40 The attribute window will be displayed and you can then input or change data.

3-3-2 Changing Other Data

(1) Editing Shapes

Select "Edit" from the "Document" menu to make changes to polygons other than those representing mangrove sub-compartment and then click on the polygon you want to change.

Use the "Edit" tool to make changes to the next polygon.

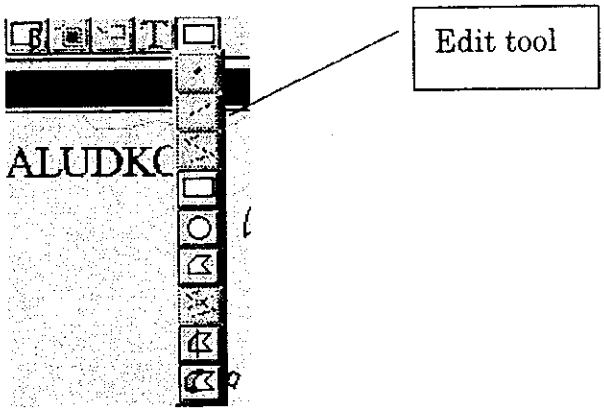


Figure 3-41 The Edit Tool.

(2) Changing Attribute Data

Open Theme Table Button

Open the table of the active theme.

Activate the theme containing the attributes you want to change. Click on the "Open Theme Table" button and the attribute table for that theme will be displayed.

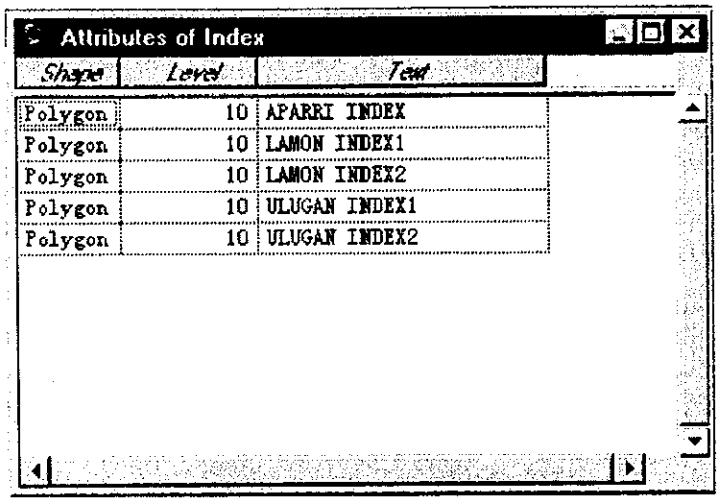
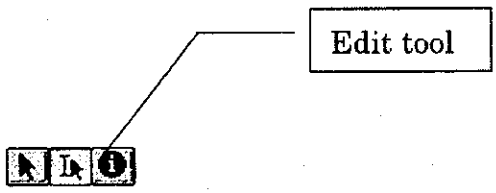


Figure 3-42 An Attribute Data Table.



After clicking on the "Edit" tool, click on the field you want to change and enter the new data.

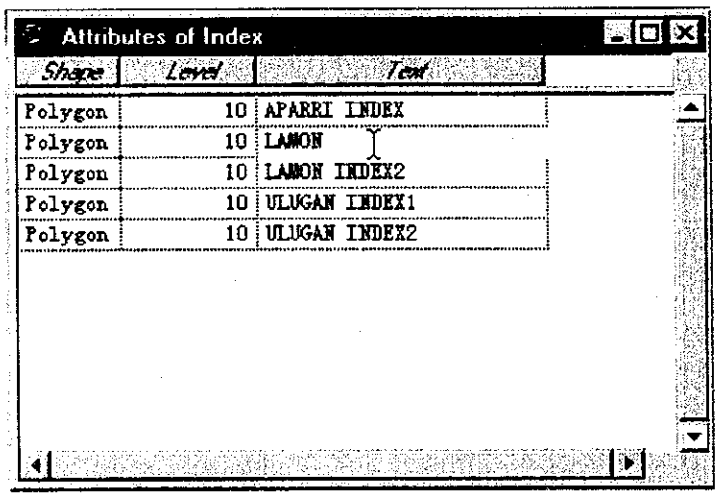


Figure 3-43 Click on the field you want to change and enter the new data.

(3) Concluding Editing

Select "Stop Edit" from the "Document" menu to stop editing. A message will appear asking you if you want to save the changes. If you want to save the changes you have made then click on "Yes" or click on "No" to revert to the original data.

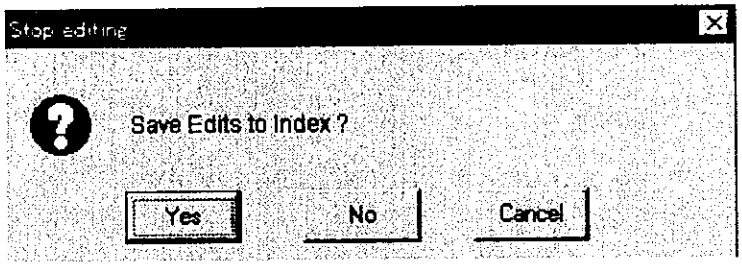


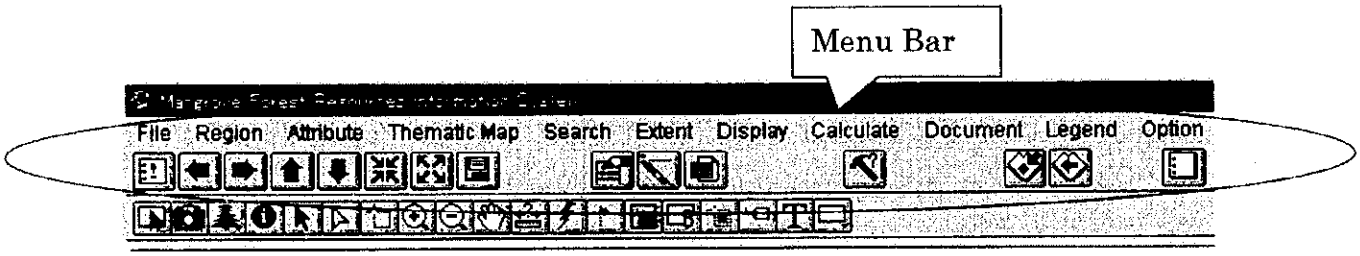
Figure 3-4 The save edit verification dialog box.

4 Command Reference

This chapter deals with the individual functions of the MAFRIMS program and provides a detailed explanation of the various tool buttons. You will find it helpful to refer to this chapter when carrying out complex operations.

4-1 Menu Commands

The Menu Bar is displayed immediately under ArcView's Title Bar. It is labeled with words, making it easy to select the functions you require. A number of functions are also provided with buttons. When you have become used to the menus, try using the buttons instead.



4-1-1 The File Menu

This menu contains functions related to opening and closing documents.

(1) Quit

Clicking on this button immediately closes down the project. Data which you have saved using the "Save" button will be saved but all other data which has not been saved will be lost.

(2) Close

Clicking on this button closes the window at the front. If this window is the very last open window then it will not be closed.

4-1-2 Region

This menu contains functions related to areas.

(1) Philippines

Selecting "Philippines" from the "Region" menu displays a general map of the Philippines.

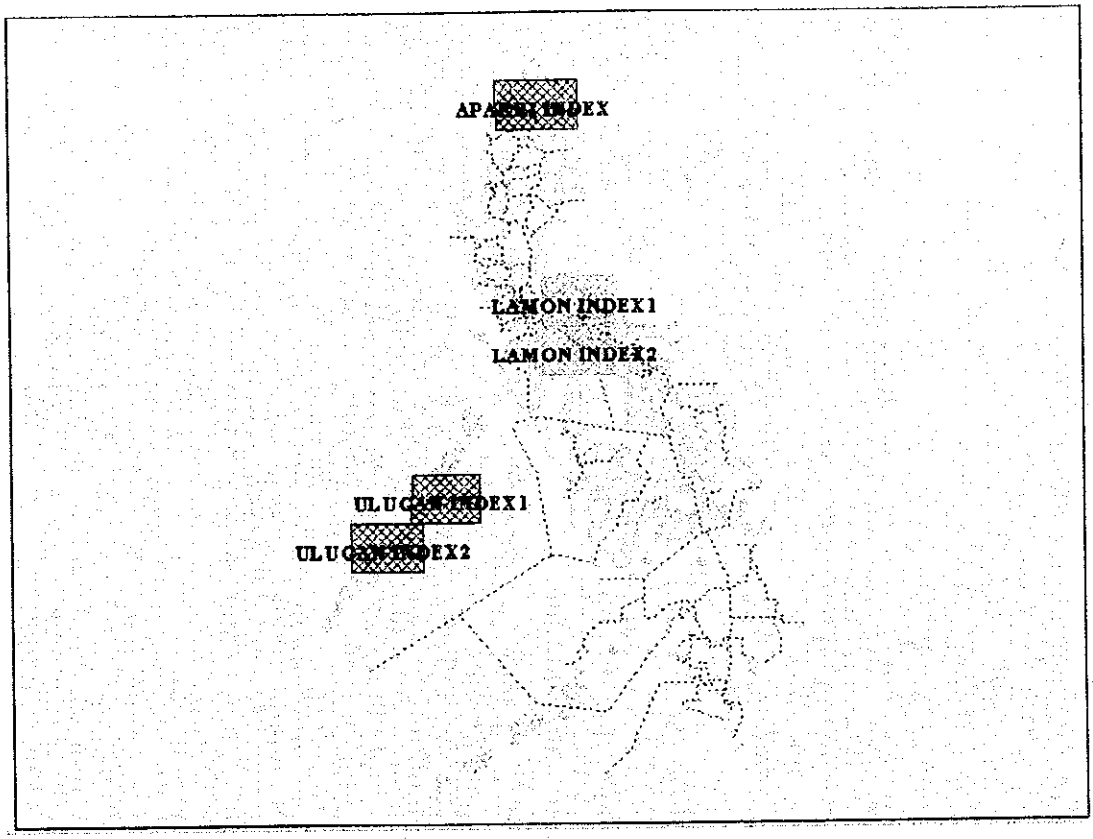


Figure 4-1 General Map of The Philippines.

(2) Reference Table

Reference tables can not be used when there is nothing recorded in them. This function shows the names of areas recorded in the "Entry" submenu. The order in which they are listed is the order in which they have most recently been used. For example, if you select the name at the bottom of the list, next time you open the Reference Table you will find it at the top of the list.

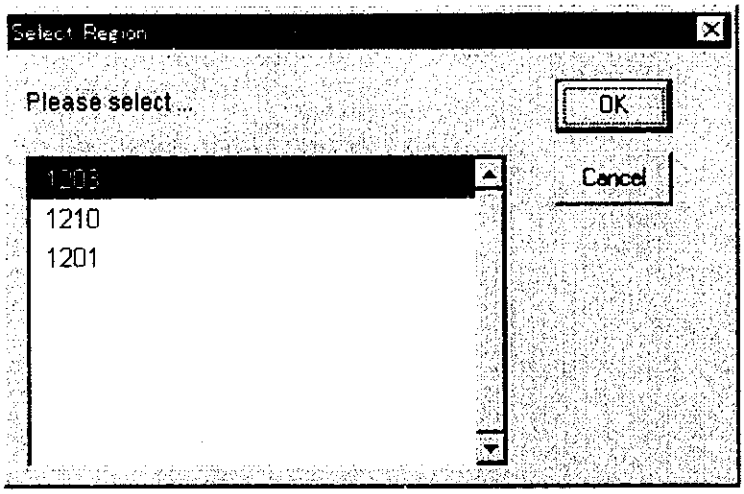


Figure 4-2 The Reference Table dialog box.

The maximum number of names that can be recorded is 100. The Reference Table is located in the same directory as the project file. Therefore, if the directory of each project file is different, it is possible to have Reference Tables for each individual project (as the names of all Reference Tables are the same, if the directory is the same, even if the name of the project file is different, you can refer to the same Reference Table). Of course it is also possible to copy a Reference Table and use the data contained in it in another project file.

(3) Entry

It is possible to record the presently displayed area in an Area Reference Table. You can use any name you like to record this file. If you designate a name which is already in use, an error message will be displayed telling you that the name is in use. A maximum of 100 names can be recorded in the list. When you record the 101st name, the name at the bottom of the Area Reference Table list (the file you used 100 times before the present file) will be deleted from the list.

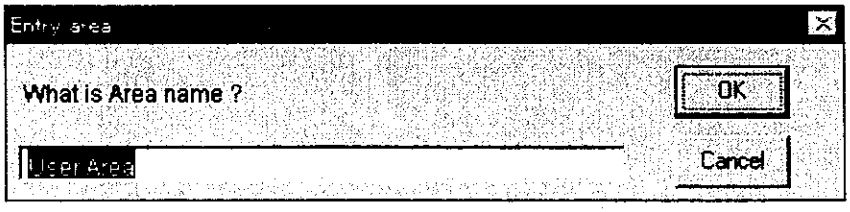


Figure 4-3 The dialog box for entering the name of the area.

(4) Index List

Select this function to change the display area to an index map area. A list of index maps existing in that area is displayed in the window. Select the area you want. Click the "Whole" button to display the whole area.

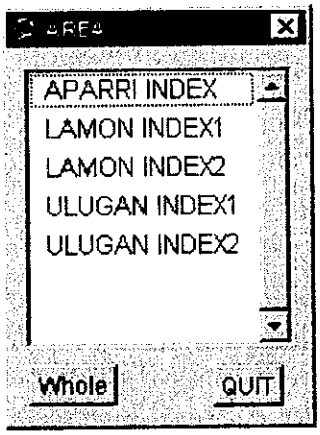


Figure 4-4 The Index List dialog box.

4-1-3 Attributes

This menu allows you to refer to attribute data associated with the map.

(1) Mangrove

Select "Mangrove" from the "Attribute" menu. The cursor will appear as a crosshair. Click on an area of mangroves to display the attribute data for that area. If there is no feature data recorded for that particular area of mangroves you will hear a "beep." It is also possible to select mangrove sub-compartment within a specific area. After selecting "Mangrove" from the "Attribute" menu, drag a box over the area you want to search. Any mangrove sub-compartment in that area will be listed in the search window.

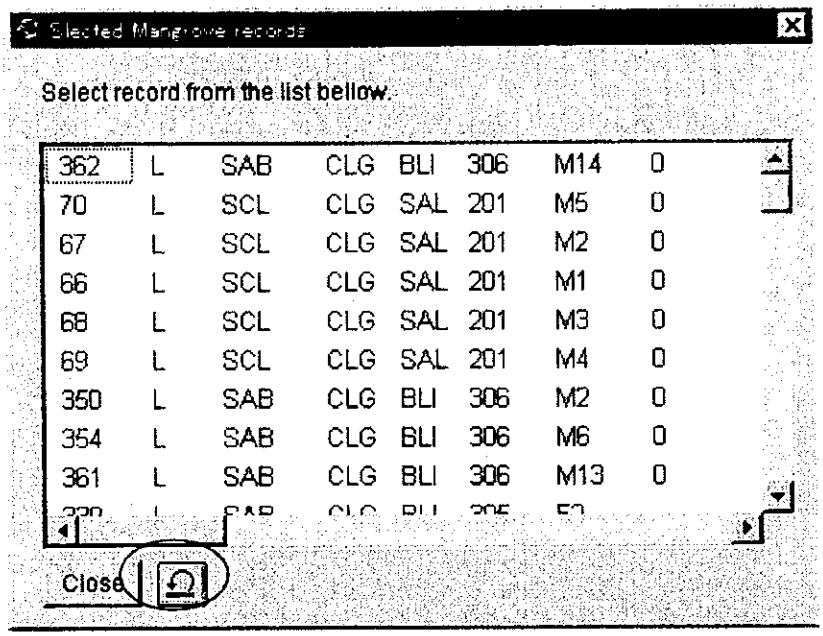


Figure 4-5 This shows the list of mangrove sub-compartment displayed after selecting "Mangrove" from the "Attribute" menu and dragging a box over a certain area.

Click on the area you want and the attributes for that area will be displayed. Click on the "Previous" button to return to the previous list.

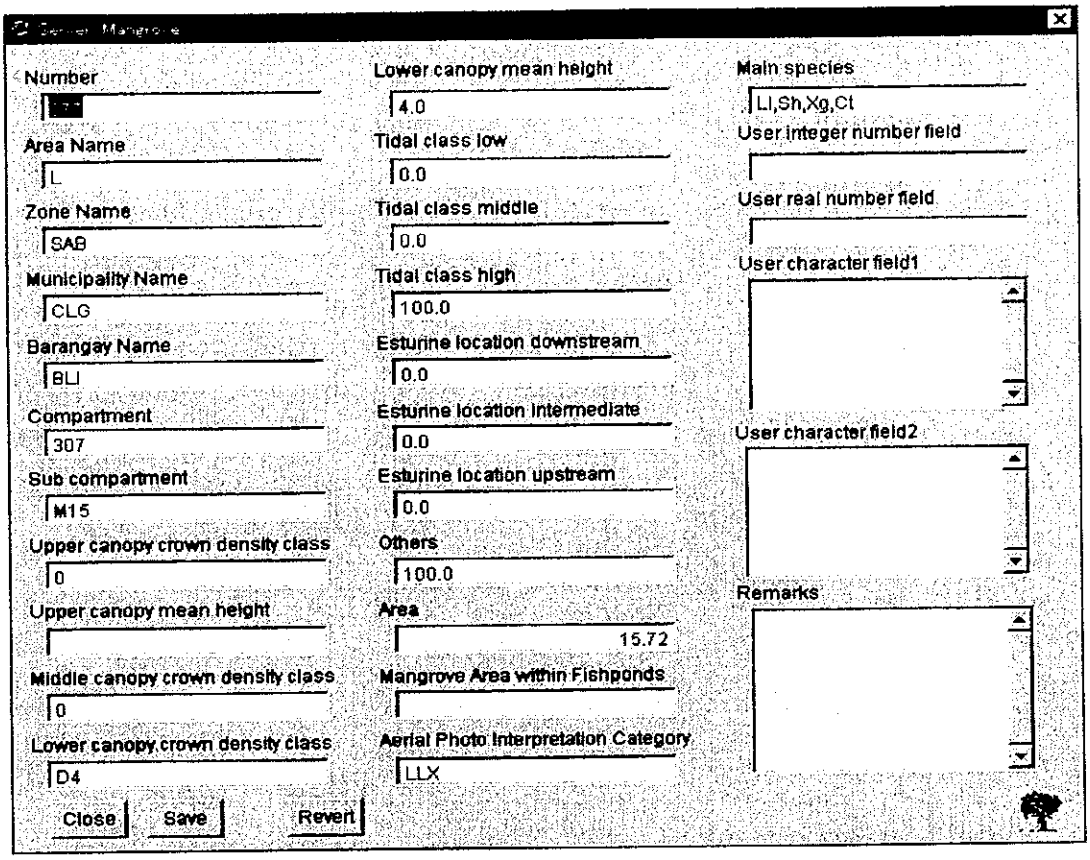


Figure 4-6 This is the Forest inventory Display window for a selected area of mangroves.

If you want make any changes on attribute data, it is possible to save changed data in disk by inputting a new value on the data item and clicking on the "Save" button.

If you have made changes with mistake, it is possible to revert to the first opened dialog box by clicking on "Revert" button.

Click on "Close" to close the attribute window.

Click on "Save" to save the contents of the attribute window to disk.

Click on "Revert" to revert to the data contained in the window when you first opened it. If you have already saved the data then you can only revert to the last saved data.

(2) Photo

Select "Photo" from the "Attribute" menu. The cursor will change to a crosshair. Click on the camera symbol you want and the attribute data for that particular photo will be displayed. If there is no feature data recorded for that particular photo will hear a "beep." As it is quite difficult to select a single camera symbol with the mouse you might want to use the mouse to drag a box over a particular area to find them. Any photos in that area will be listed in a search window from which you can make your selection. You can add or change data in the attribute window. Be sure to save your work by clicking on the "Save" button if you make any changes.

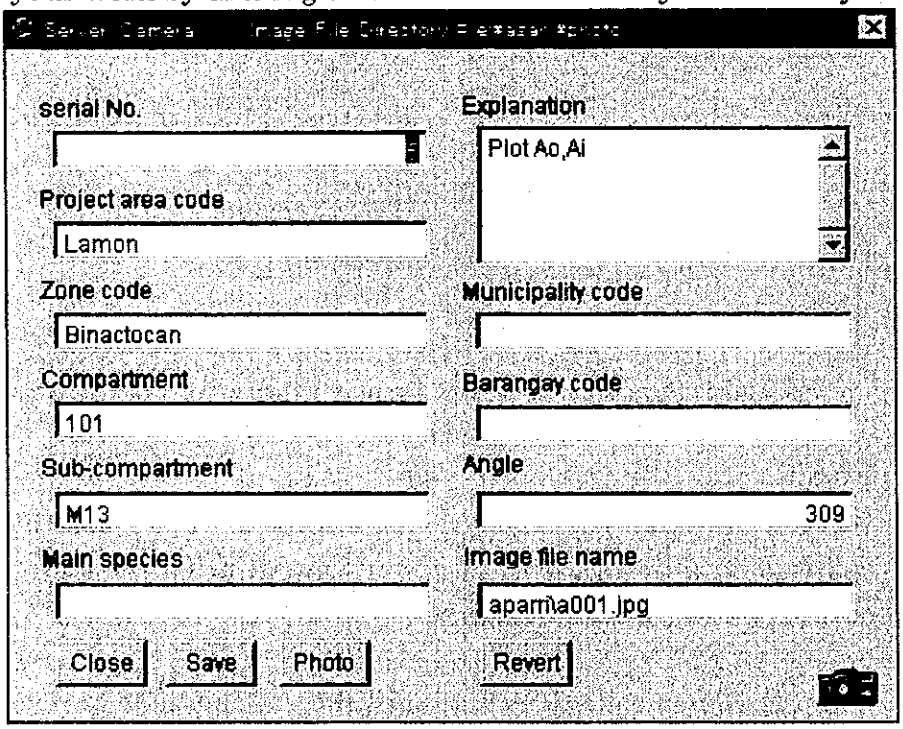


Figure 4-7 This is an example of a photo attribute window.

If you have made changes by mistake, click on "Revert" to revert to the data contained in the dialog box when you first opened it and then click on "Save" to save the original data again. If you want to return to the selection list after viewing the attribute data for a particular photo, save any changes you have made and then click on the "Previous Selection" button. The original selection list will be displayed.

Click on "Close" to close the attribute window.

Click on "Save" to save the contents of the attribute window to disk.

Click on "Revert" to revert to the data contained in the window when you first opened it. If you have already saved the data then you can only revert to the last saved data.

(3) Export to Excel

You can export the presently selected tables of the active theme as Microsoft Excel data. Select "Export to Excel" from the "Attribute" menu. Don't forget to make the theme containing the selected results active first. If there are no results selected, a "No Selection" error message will be displayed. When selected results do exist but the "No Selection" error message is still displayed, check that the active theme is in fact the theme containing the selected results. If results have been selected and the correct theme is active then the dialog box shown in Figure 4-8 will be displayed.

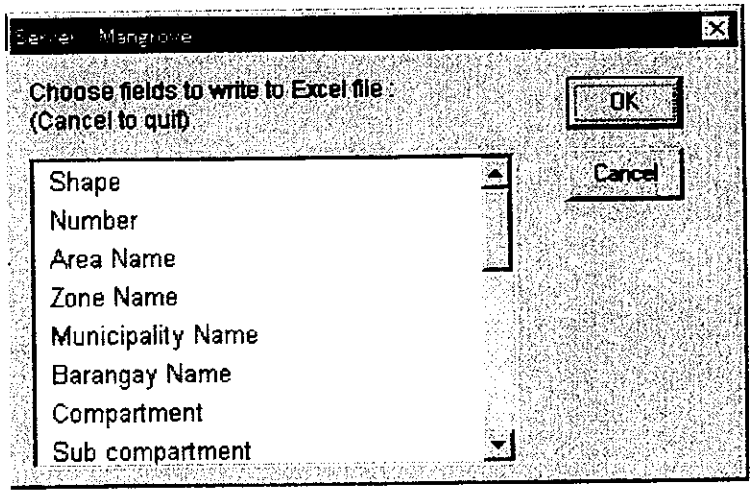


Figure 4-8 This is the Export to Excel dialog box.

Select the fields you want from the list. If you have selected a field by mistake, click on it again to deselect it. After you have selected all the fields you want click "OK." Excel will be started up and the selected fields exported as a new book. If you decide you do not want to export data to Excel then click "Cancel" in the Export to Excel dialog box to return to the previous screen.

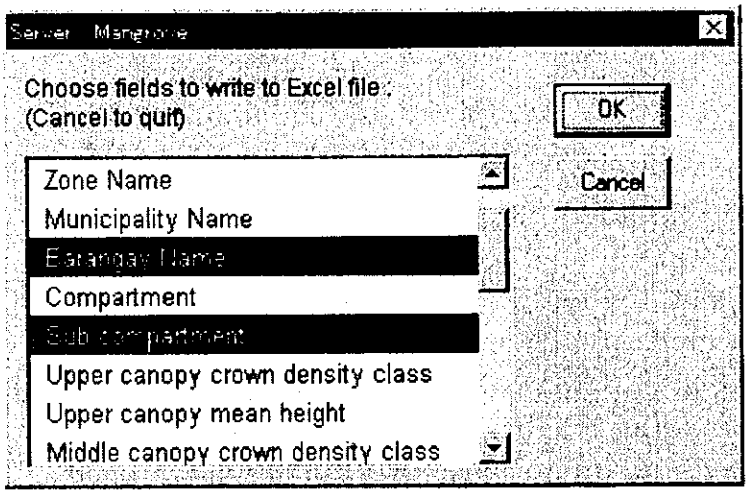


Figure 4-9 This shows a number of fields selected in the Export to Excel dialog box.

In the new Excel book, the first line will contain the View Name and the second line will contain the Field Name. Actual data appears from line three onwards.

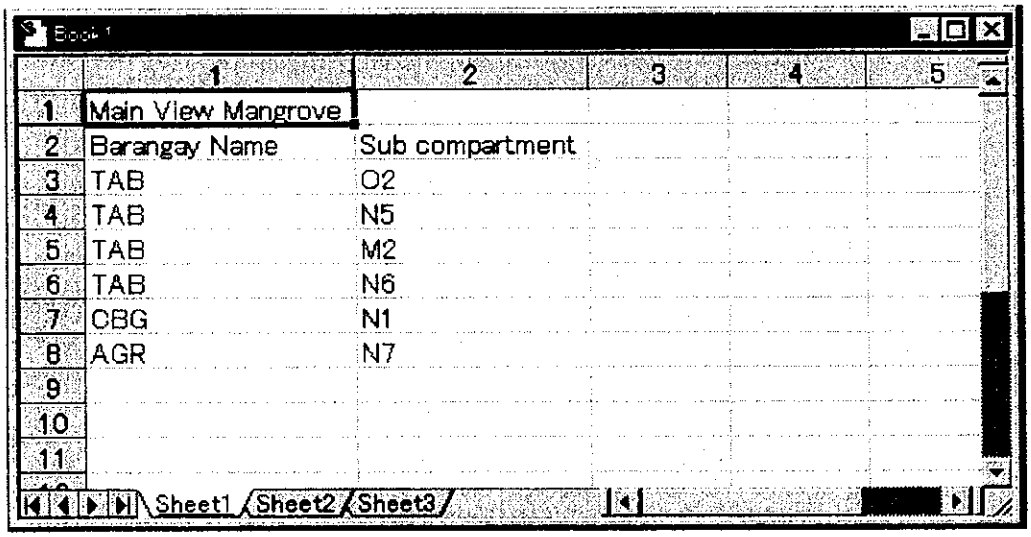


Figure 4-10 This shows a selection of data as it appears in Microsoft Excel after it has been exported from the program.

If Microsoft Excel is already active when data is being exported, the message shown in Figure 4-11 will be displayed when the data has been successfully exported. If you want to examine the data you have just exported, bring the Microsoft Excel window to the front to make it active.

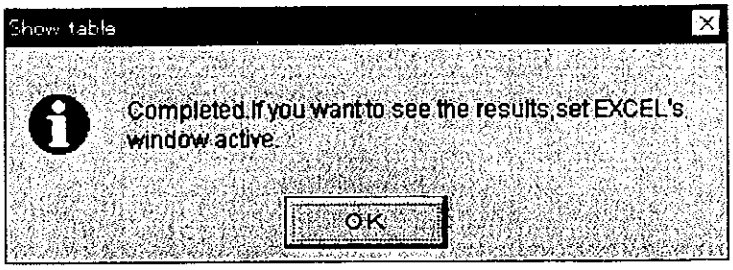


Figure 4-11 This message will be displayed when you have successfully exported data to Microsoft Excel.

When Microsoft Excel is started up, the program refers to the data contained in the "defenv.env" file in order to find the location of the Excel file. Although the location of Microsoft Excel files hardly ever changes, the location of the file may change if Microsoft Excel has been reinstalled, etc. In such a case it is necessary to make changes to the data contained in the file. You can manually make changes to the data contained in this file in the "EXCELFILE" block or you can reset this data by deleting the "defenv.env" file and restart Microsoft Excel. When the program is restarted, the system asks you to locate the Excel file. If you chose to delete the "defenv.env" file, remember that all other data stored in that file will be deleted and the system may ask you to reenter other data as it needs it.

4-1-4 Thematic Map

This menu allows you to create thematic maps.

(1) Mangrove Classification Map

Select "Mangrove Classification Map" from the "Thematic Map" menu. Maps of forest types can be created by selecting different fill types and colors to represent different mangrove sub-compartment.

Legend of mangrove land use type

F	Fishpond
M	Mangrove
N	Nipa
Nm	Nipa-mangrove
O	Others

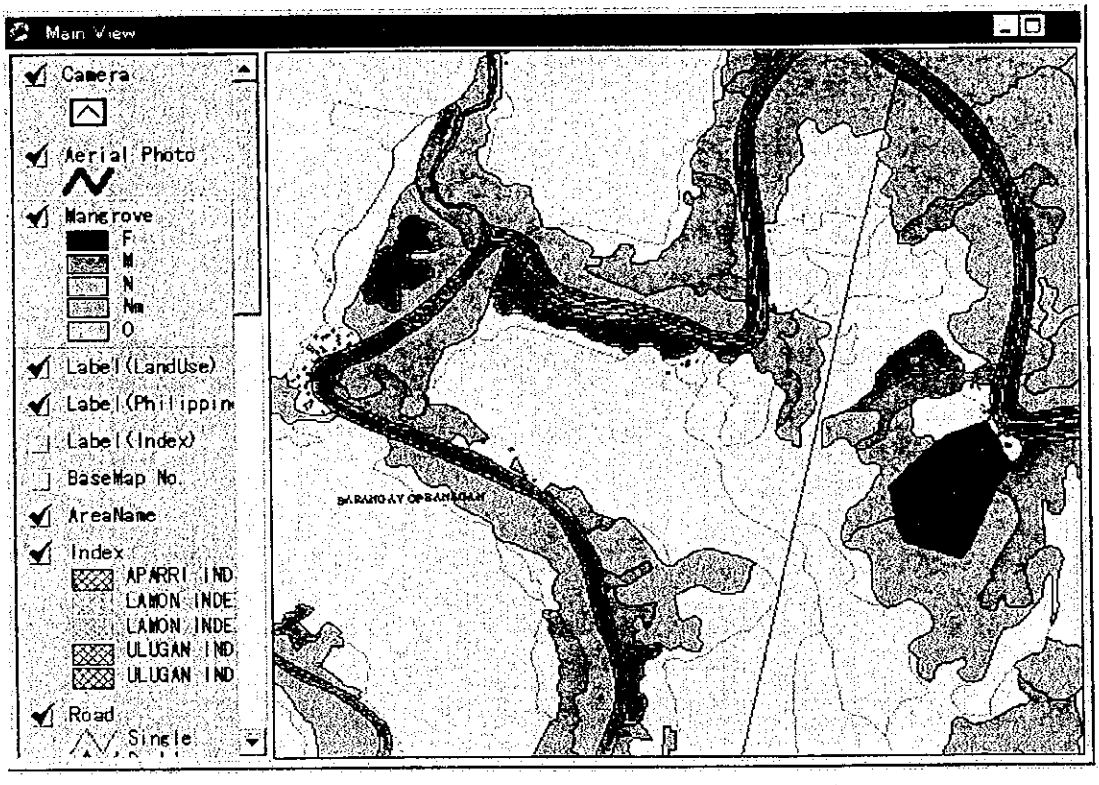


Figure 4-12 An example of a map showing mangrove forest types.

(2) Mangrove Classification Map (Outline)

Select "Mangrove Classification Map (Outline)" from the "Thematic Map" menu. This will display an outline of the map without the fill types and colors.

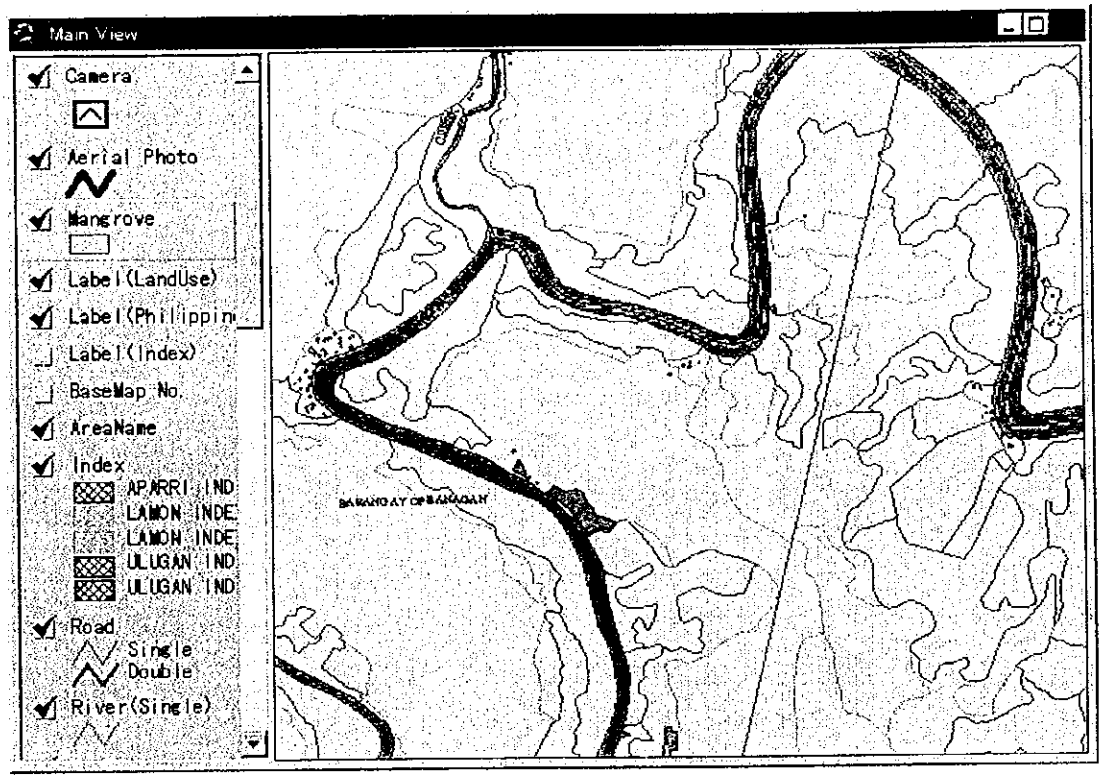


Figure 4-13 An example of a mangrove classification map outline.

(3) Land Use Map

Select "Land Use Map" from the "Thematic Map" menu. Land use maps are created by selecting different fill types and colors for polygons to represent different types of land use.

Legend of land use type

S	Soil
W	Water
FO	Forest
Mg	Mangrove
FP	Fishpond
DL	Dry land
AL	Arable land
Etc.	

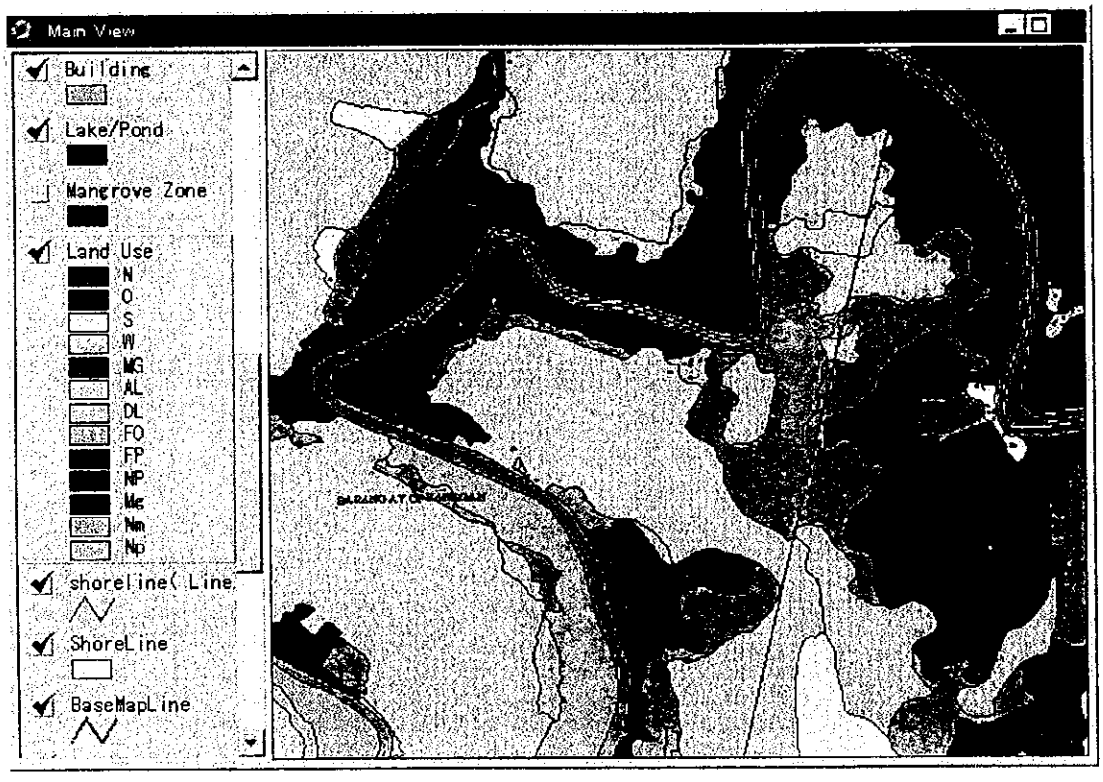


Figure 4-14 This is an example of a land use map.

(4) Land Use Map (Outline)

Select "Land Use Map (Outline)" from the "Thematic Map" menu. This will display an outline of the map without the fill types and colors.

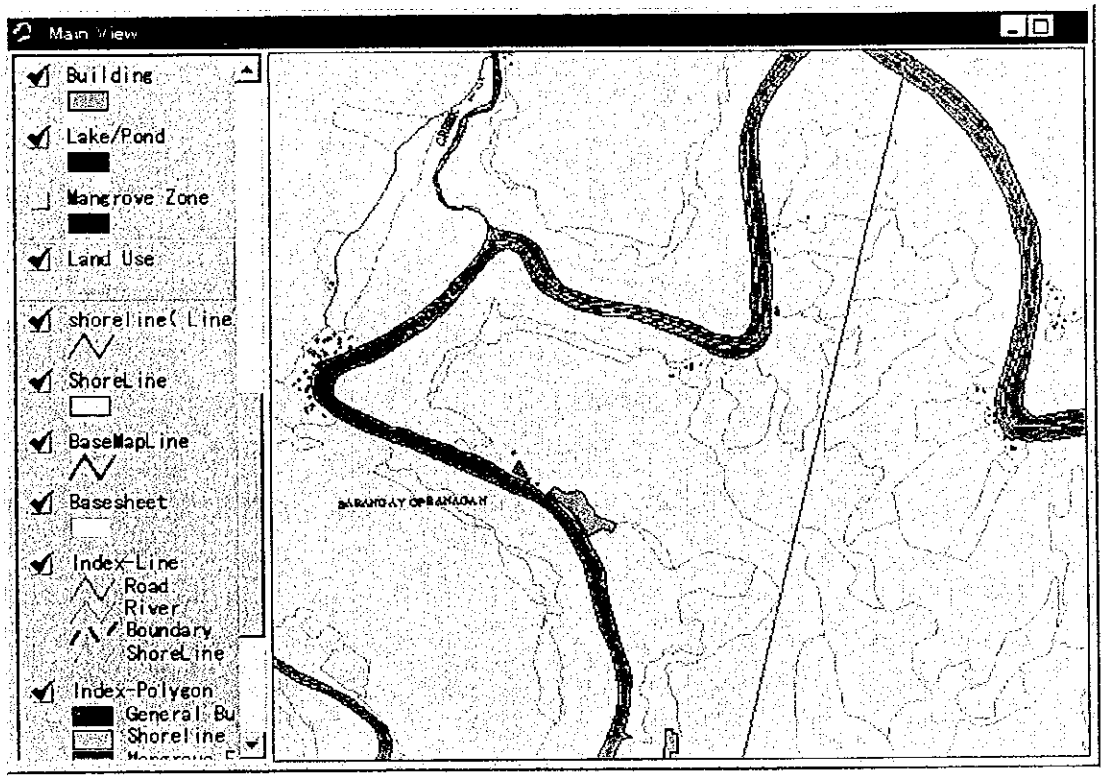


Figure 4-15 This is an example of a land use map outline.

4-1-5 Search

This menu allows you to carry out searches.

(1) Geographical Search

Select "Geographical Search" from the "Search" menu. The area search dialog box shown in Figure 4-16 will be displayed. When the window first opens, all available files are displayed alphabetically.

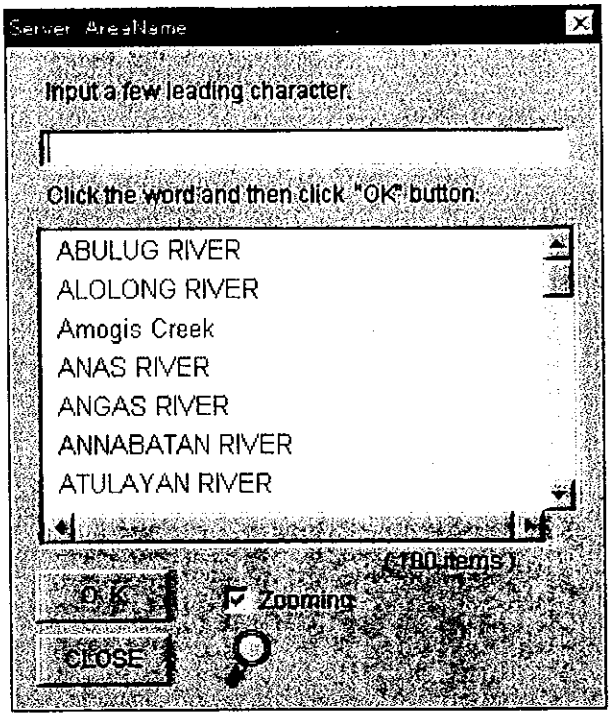


Figure 4-16 An example of an area search dialog box.

As you start to input the name of the area you are looking for, the records in the list corresponding to that data will remain while the other records are eliminated from the list.

For example, if you input C, then Cabayu River, Cabayugan, and Cabuluan River will remain in the list while all other records are automatically eliminated from the search list.

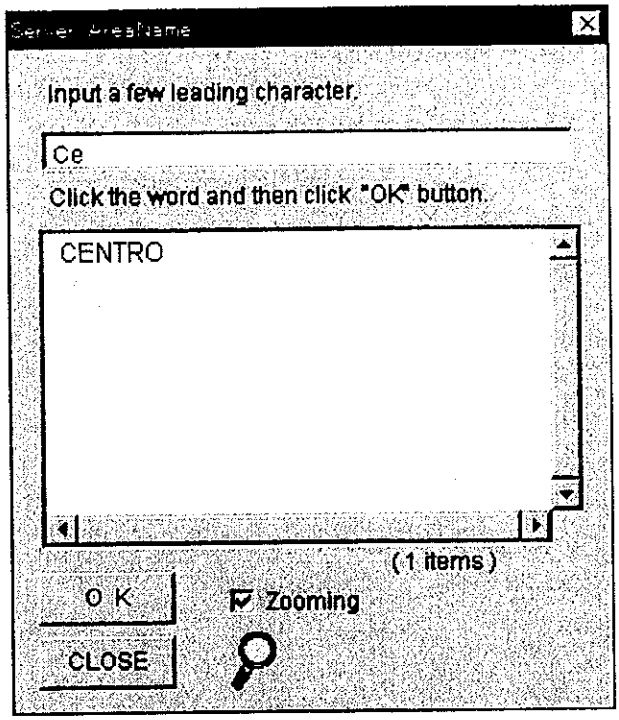


Figure 4-17 This is an example of an area search where the letters "C" and "e" have been input. Only files with those two letters in that order remain in the list.

As the search engine also supports fuzzy searching you can search for areas, etc. even if you do not know the correct spelling, etc. Combine "*" with any designated character to search for files with any letter and the designated character in their file names.

Example.

A search using "*H" found "BABUYAN CHANNEL, BAHILE"
A search using "*NN" found "ANNABATAN RIVER, BABUYAN CHANNEL"
A search using "B*O" found "BAKO-BAKO RIVER, BARANGAY ROAD"

When you click on the name of the area you are looking for, that file name will appear in the upper box of the search window. If you click on "OK" then the search engine will search for that name on the map.

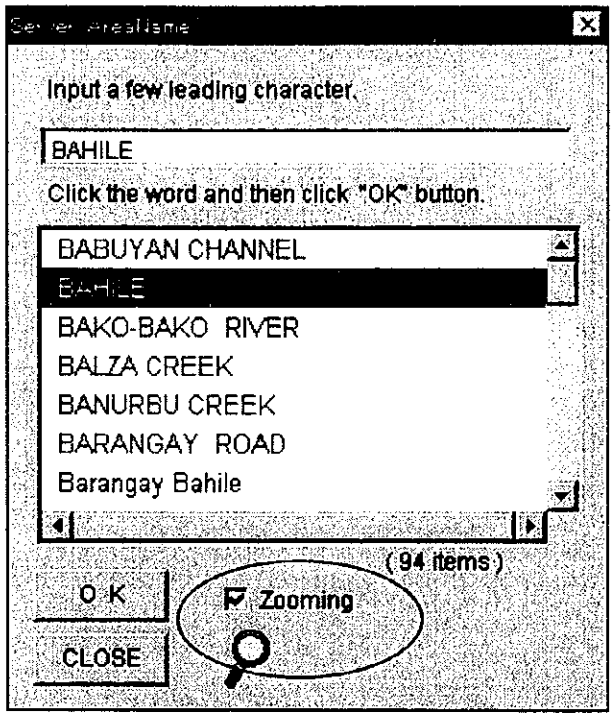


Figure 4-18 Clicking on the area name in the search list will cause that name to appear in the upper box of the search window.

If you deselect "Zooming" then after a search has been carried out the program will not zoom in to the area being searched for. However, if "Zooming" is selected then the program will automatically zoom in on the area being searched for and enlarge and display it.

(2) Photo

Select "Photo" from the "Search" menu to carry out a conditional search of the photo theme. Select the fields you want to use to search for photos by checking or unchecking the radio buttons of the various fields shown in the search window. If you use the "Angle" field don't forget to include the numerical angle values.

Click on the "New" button if you want to carry out a new search. Click on the "And" button if you want to continue your search by including new search fields to further narrow down your selection. Click on the "Or" button if you want to retain the result of the present search and add to it by carrying out a search using other fields.

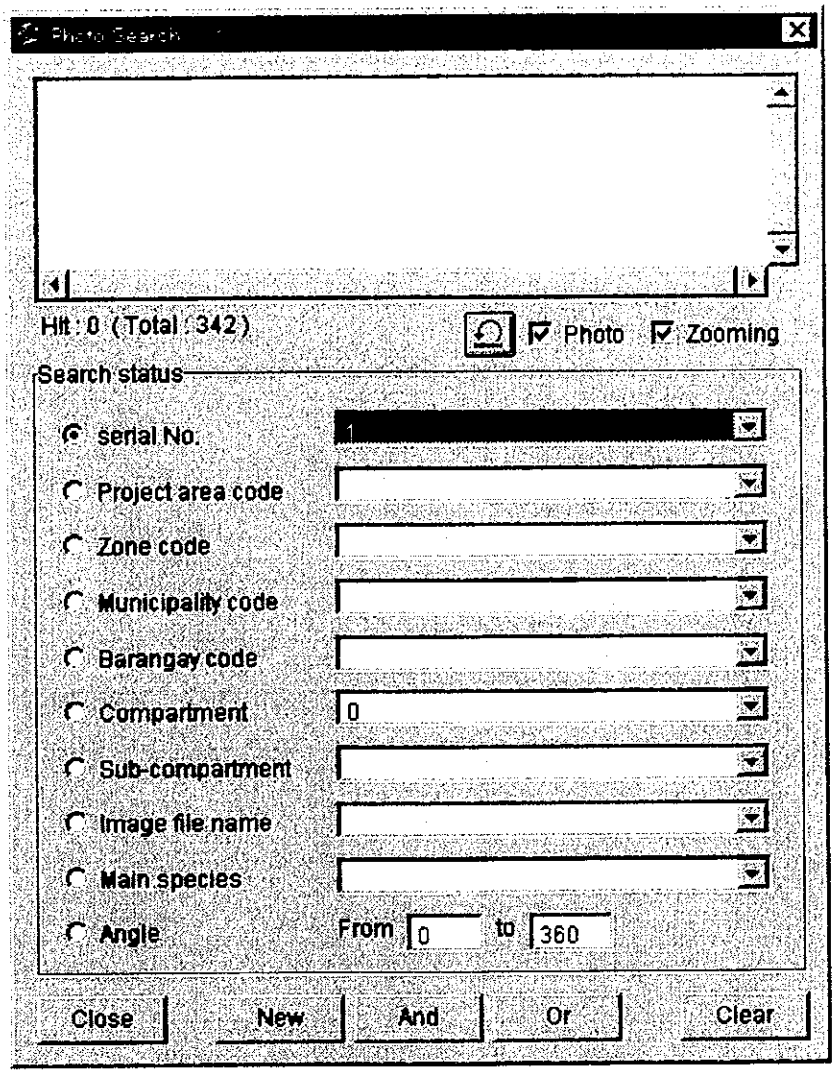


Figure 4-19 The photo search dialog box.

Search results will be listed in the upper box of the search window. (At this stage a search of photo data on the map itself has not yet been carried out.) Click on the data you want from the list in the upper box of the search window and a search of camera symbols on the map itself will be carried out.

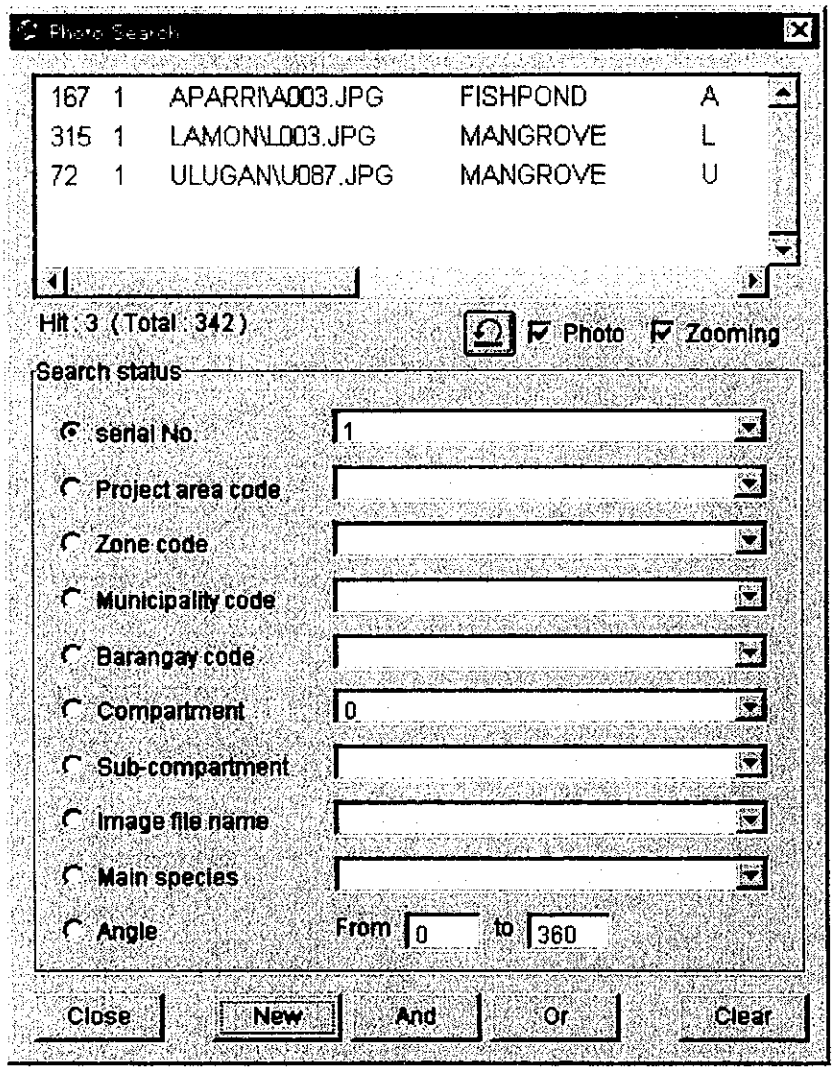


Figure 4-20 Click on one of the files in the upper box of the search window to carry out a search for those items on the map.

If the "Photo" check box is selected photos will be automatically be displayed. If it is not selected then a list of photos will be displayed. If the "Zoom" check box is selected then the program will zoom in on photo symbols to show an enlarged area approximately 500m2 in size. If it is not selected, then the program will not zoom in on the location of photos.

(3) Mangrove

Select "Mangrove" from the "Search" menu to carry out a conditional search of the mangrove theme. In the Forest inventory Search dialog box, select the fields you want to search by checking the appropriate radio buttons. When you check a radio button, a box will appear to the right of the field name. Select the item you require from that list. When the program is started up, the Barangay Name field is active and so the box to the right of this is visible.

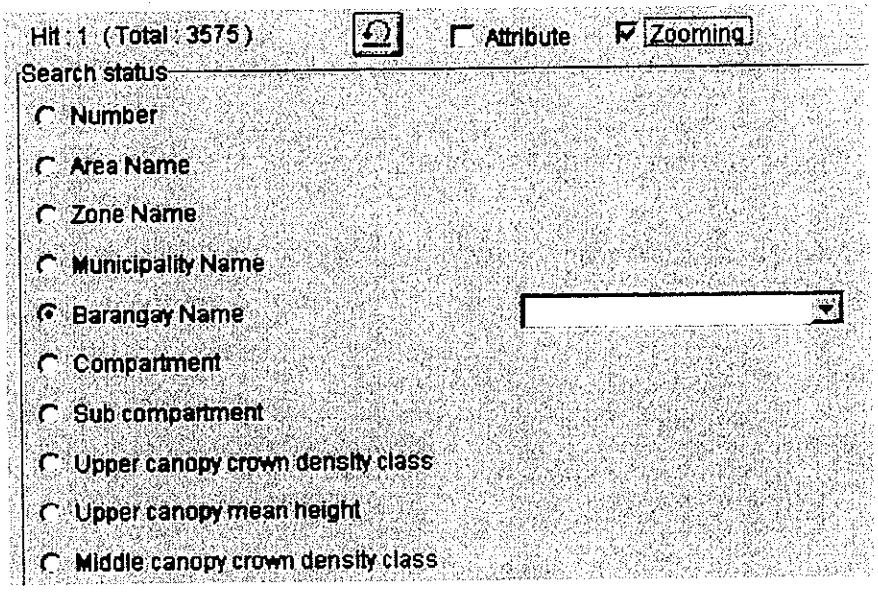


Figure 4-21 This is a part of the Forest inventory Search dialog box.

Click on the "New" button if you want to carry out a new search. Click on the "And" button if you want to continue your search by including new search fields. Click on the "Or" button if you want to retain the result of the present search and add to it by carrying out a search using other fields.

Mangrove data found by the search will be listed in the upper box of the search window. (At this stage a search of photo data on the map itself has not yet been carried out.) Click on the data you want from the list in the upper box of the search window and a search of mangrove areas on the map itself will be carried out.

If the "Zoom" check box is selected then the program will zoom in on

mangrove data to show an enlarged area approximately 500m2 in size. If it is not selected, then the program will not zoom in on the location of mangrove sub-compartment.

(4) Theme on Theme (within)

Select "Theme on Theme (within)" from the "Search" menu to carry out a theme search on themes. In the theme search dialog box select the target theme and click "OK" as shown in Figure 4-22.

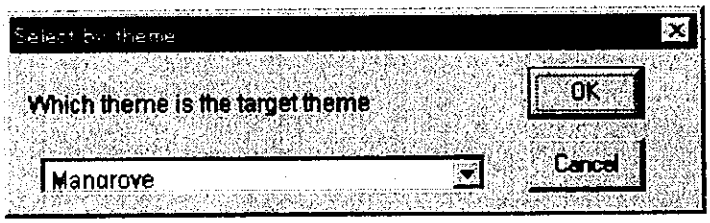


Figure 4-22 The first dialog box where the target theme is selected.

In the next dialog box, select the overlay theme as shown in Figure 4-23.

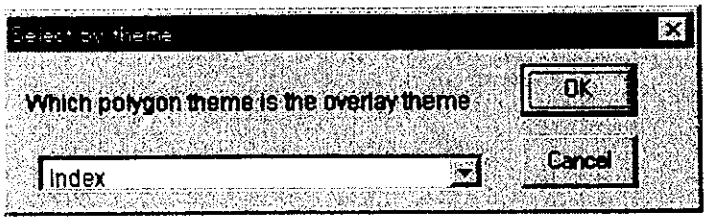


Figure 4-23 The second dialog box where the overlay theme is chosen.

At least one feature in the overlay theme must be selected before a search can be carried out. When you want to select a particular theme and you are using the overlay theme as a whole, do so after selecting the entire overlay theme. This submenu is used to search for features in the target theme which fall completely within the boundaries of features selected in the overlay theme. (Sometimes, if the overlay theme is higher in alphabetical order than the target theme, the target theme selection is difficult to see as it is slightly covered.) To deselect a theme, make the theme active. Click on the right mouse button to display a pop-up menu as shown in Figure 4-24. Select "Clear Select" in this menu or click on the "Active Theme Deselect" button in the menu bar, as shown in Figure 4-25.

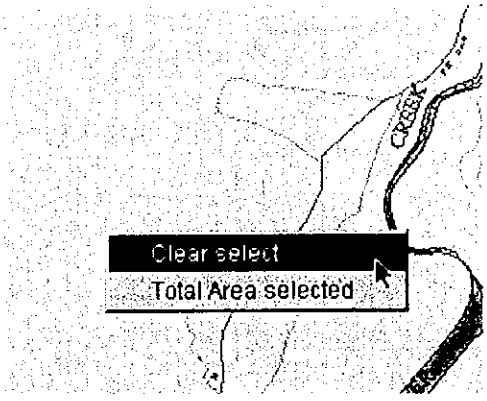


Figure 4-24 This shows the pop-up menu displayed by clicking on the right-hand button of the mouse.

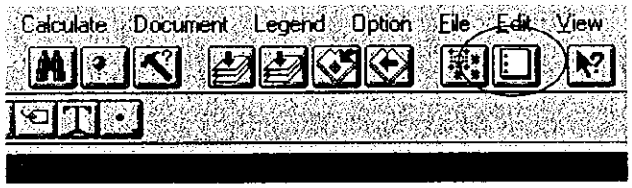


Figure 4-25 The active theme deselect button.

(5) Theme on Theme (intersect)

Select "Theme on Theme (intersect)" from the "Search" menu to carry out a theme search using themes. The selected theme is called the "Target Theme" while the theme used in the selection is called the "Overlay Theme." First to be designated is the target theme and then the overlay theme. At least one feature in the overlay theme must be selected before a search can be carried out. When you want to select a particular theme and you are using the overlay theme as a whole, do so after selecting the entire overlay theme. This submenu is used to search for features in the target theme which intersect with or border on features selected in the overlay theme. This is where this type of search is different from the "Theme on Theme (within)" search. (Sometimes, if the overlay theme is higher in alphabetical order than the target theme, the target theme selection is difficult to see as it is slightly covered.) To deselect a theme, make the theme active. Click on the right mouse button to display a pop-up menu as shown in Figure 4-24. Select "Clear Select" in this menu or click on the "Active Theme Deselect" button in the menu bar, as shown in Figure 4-25.

(6) Switch Selection

Select "Switch Selection" from the "Search" menu to switch items selected in active themes with other items. If this is carried out when nothing is selected, then everything will be selected. If this is carried out when everything is selected, then everything will be deselected. This function operates the same way for all themes.

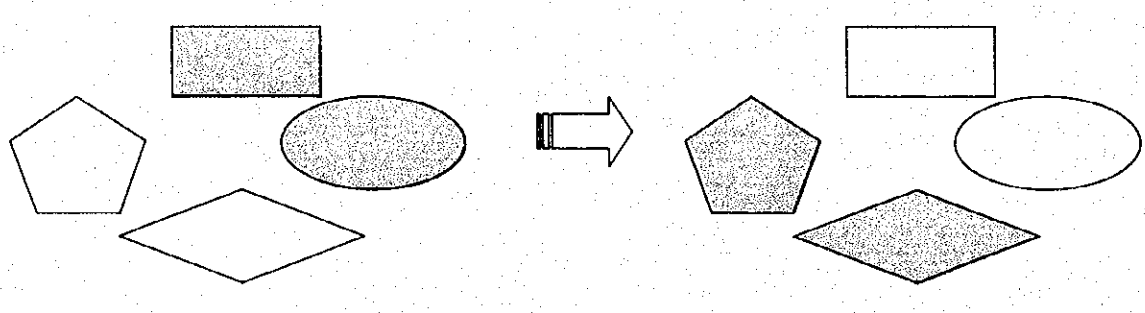


Figure 4-26 Switching Selection