

Training module # SWDP - 48

***How to transfer data
between temporary
databases***

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CSMRS Building, 4th Floor, Olof Palme Marg, Hauz Khas,
New Delhi – 11 00 16 India
Tel: 68 61 681 / 84 Fax: (+ 91 11) 68 61 685
E-Mail: hydrologyproject@vsnl.com

DHV Consultants BV & DELFT HYDRAULICS

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1. Module context

While designing a training course, the relationship between this module and the others, would be maintained by keeping them close together in the syllabus and place them in a logical sequence. The actual selection of the topics and the depth of training would, of course, depend on the training needs of the participants, i.e. their knowledge level and skills performance upon the start of the course.

2. *Module profile*

Title	:	How to transfer data between temporary databases
Target group	:	HIS function(s):
Duration	:	x session of y min
Objectives	:	After the training the participants will be able to:
Key concepts	:	•
Training methods	:	Lecture, exercises
Training tools required	:	Board, flipchart
Handouts	:	As provided in this module
Further reading and references	:	

3. Session plan

No	Activities	Time	Tools
1	<i>Preparations</i>		
2	<i>Introduction:</i>	min	OHS x
	<i>Exercise</i>	min	
	<i>Wrap up</i>	min	

4. Overhead/flipchart master

5. Handout

Add copy of the main text in chapter 7, for all participants

6. Additional handout

These handouts are distributed during delivery and contain test questions, answers to questions, special worksheets, optional information, and other matters you would not like to be seen in the regular handouts.

It is a good practice to pre-punch these additional handouts, so the participants can easily insert them in the main handout folder.

7. *Main text*

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How to transfer data between temporary databases

1 Data transfer between temporary datasets

1.1 Transferring raw data from SDDPCs to DDPCs

The raw data is to be archived at the SDSCs/RDSCs for long term reference and it is also to be available at all the DPCs/SDPCs/RDPCs for immediate reference during the process of validation of data. The raw data sets are originally prepared at the SDDPCs by keying-in the observed data into the SWDES workareas and removing all data entry mistakes and highly self-evident errors. From any SDDPC, this raw data is transferred to the controlling DDPC by making transfer workarea of incremental data readied beyond the last such transfer to the DDPC.

Use of “Fragmentation” option available in SWDES is made for making such incremental data sets at the SDDPCs. Normally, as a regular routine monthly transfer of incremental data sets from SDDPCs to DDPCs (by 10th of each month), the data entered for the last month is fragmented and sent to the DDPC. Fragmentation option is available as a button on the tool bar of the main switch board. The form for fragmentation option is as shown in Figure 8.1. In this, all the entered data for any user-defined set of stations from any start date to any end date can be copied from an existing database and put into a new transfer workarea. The selected stations are highlighted and the chosen start and end dates are displayed for the purpose of reference at the time of making the transfer workarea. The user has to specify the name of the file to be created by the program and receive all the data being transferred. Such transfer workareas are made separately for each of the workareas available at the SDDPCs.

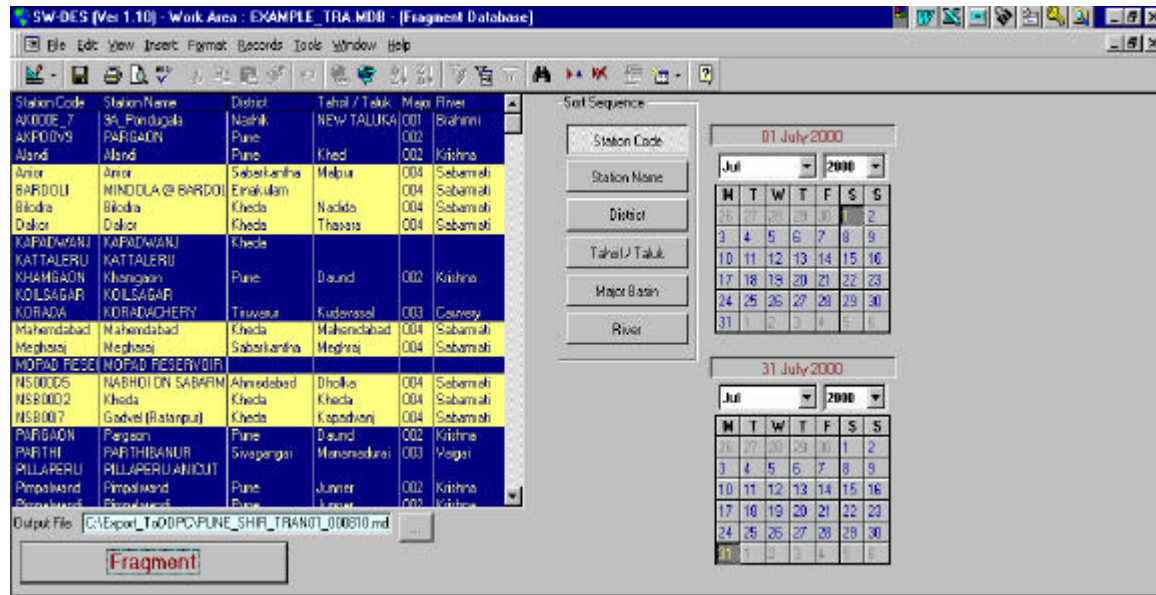


Figure 1.1: Layout of the screen for fragmentation of the data

A uniform guideline may be followed for assigning file names to such transfer workareas being sent from the SDDPCs to the controlling DDPCs. This will be highly beneficial in recognising the transfer workarea by merely knowing its filename. The filenames to be used for these transfer workarea are recommended to be based on: (a) a string “TRANnn”, (b) yymmdd and (c) name of the parent workarea. Here “nn” in the string is any number used for

adequately distinguishing different transfer workareas of the same date and “parent” workarea is the one from which the transfer is being made.

Thus the data required to be transferred from a SDDPC to the DDPC can be prepared as explained above. The actual communication of these transfer workarea files to the DDPCs can be through any of the links prescribed under the Hydrology Project such as using physical media (preferably on CD), data transfer networks, telephone line etc. For the purpose of copying transfer workarea file(s) on to CD every DPC will be supplied with a CD writer individually. Practice for such transfer using physical media must be ensured so that data can be communicated (though with a lag of couple of days) even when other automatic communication link may not be working perfectly.

1.2 Consolidating raw datasets at the DDPCs

At the DDPCs there are SWDES workareas which are exact replicas of the workareas operative at SDDPCs. Once the raw data sets are received at the DDPCs (sent from the SDDPCs), they are consolidated in these respective workareas using the “Consolidation” option available in SWDES. Each incremental dataset in the form of transfer workarea when consolidated to the existing workarea at DDPCs makes the replicas up-to-date vis-à-vis the status of the respective workarea at the SDDPCs.

Consolidation option is available as a button on the tool bar of the main switch board. The form for consolidation option is as shown in Figure 8.2. For consolidation the receiving workarea (into which the transfer workarea is being merged) must be active. Then the transfer workarea (containing incremental data set) as received from the SDDPC is selected for merger (consolidation) into the corresponding existing workarea at the DDPC. With mere one instruction as “Consolidate” the content of the transfer workarea is copied in the receiving workarea.

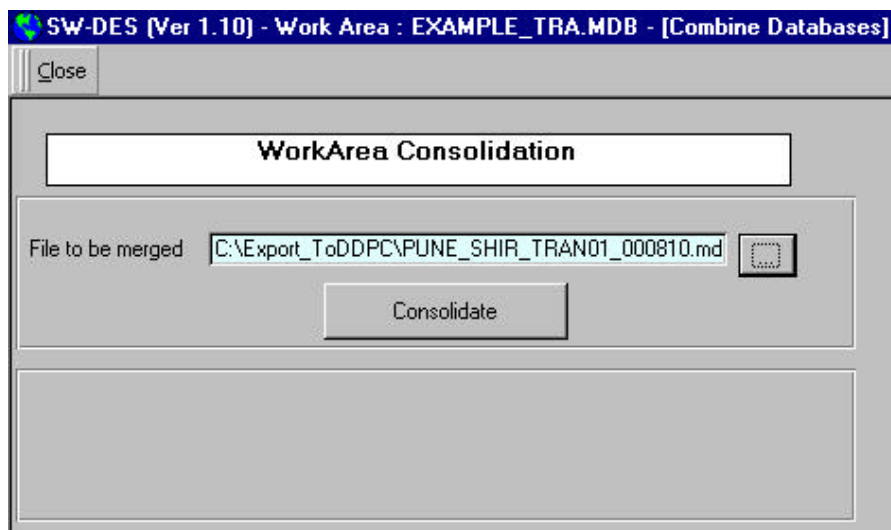


Figure 1.2: Layout of the screen for consolidation of transfer work area into existing work area

In case there is only one workarea containing data of all the stations under the SDDPC then at the DDPC also there would be only one corresponding workarea. However, if at the SDDPC there are more than one workareas for different categories of stations (on account of a large number of stations under the SDDPC) then at the controlling DDPC also there would be equal number of workareas as replicas of the ones available at the SDDPC. In such a case there will also be one more workarea at the DDPC for combining individual

workarea among the multiple workareas of the SDDPC. Such a combined workarea at the DDPC can also be maintained by similarly consolidating all individual incremental transfer workareas arriving from the SDDPCs. Thus in such cases consolidation of these incremental transfer workareas is required to be done twice: (a) once into the individual replica workareas and (b) into the combined single workarea for each SDDPC.

1.3 Transferring raw data from SWDES workareas to that of HYMOS

The incremental raw data sets arriving every month from the SDDPCs are consolidated promptly at the DDPCs in the workareas for each SDDPC separately. These workareas contain all types of data for all the stations under the SDDPC belonging to the same distinct sub-basin of the independent river. From these workareas, data is regularly exported to an intermediate “transfer database” which is then used for importing into workareas of secondary module. Such transfer of data is regularly done on a monthly basis for incoming monthly incremental data. Otherwise such transfer of data can be made as and when there is a requirement to do so.

As mentioned earlier, there would usually be one workarea in the secondary module, at the DDPCs, pertaining to the same drainage area (of the independent river). Only in rare cases, it may have two or more workareas for distinct sub-basins/zones of independent river basin/zone. In these workareas, data is regularly imported from the intermediate “transfer databases”, created by export of raw data from SWDES workareas. This data would then undergo secondary validation and other necessary hydrological processing.

1.3.1 Exporting data from SWDES workarea to transfer database

“Data Export to HYMOS - (New version)” option as available in SWDES is used for exporting the required data to transfer database. Any set of stations and data series can be chosen by the user in SWDES and data for any period (defined by setting the start and end dates) can then be exported to transfer database. The screen for the export of data to HYMOS is as shown in Figure 8.3. There are two types of data – static/semi-static and time-oriented data. These different types of data are grouped under suitable headings and also for various time intervals on the form. For every item there are three possible options: (a) to export “all” the data, (b) to export “none” of the data and (c) to choose a few (“custom”) from the available list. Together with the selection on various data series the time period for which the data has to be transferred is also to be specified. All the exported data is put in one single data file called the transfer database. This transfer database is an MS Access database file with a fixed extension of “.mdb”.

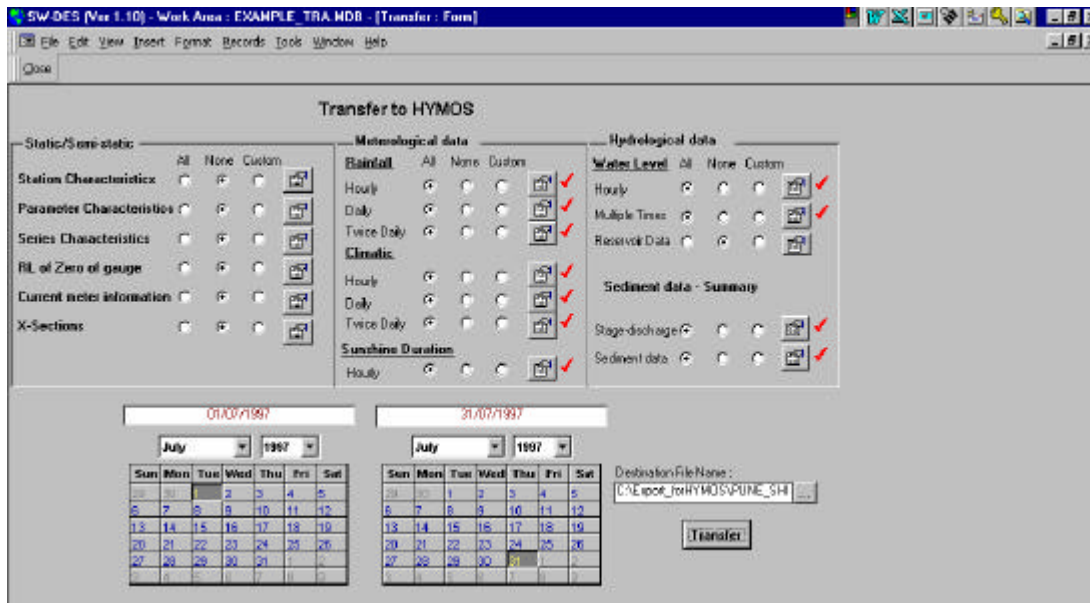


Figure 1.3: Layout of the screen for exporting data from SWDES to HYMOS

As a practice these transfer databases would be made at the DDPCs and would be imported in HYMOS databases at the same place and time. In such circumstances the names for these transfer databases can be any strings which the user may find suitable for recognition. However a uniform guideline if followed would make such filenames in a standard manner and can be beneficial in recognising any transfer database even after a lapse of considerable period. The filenames to be used for these transfer databases are recommended to be based on: (a) a string ‘EXPOnn’, (b) yymmdd and (c) name of the parent workarea. Here “nn” in the string is any number used for adequately distinguishing different transfer databases of the same date and “parent” workarea is the one from which the transfer is being made.

1.3.2 Importing data from transfer database to HYMOS database at the DDPCs

Import of data from the transfer database into the HYMOS databases is accomplished using one of the utilities “Import Transfer Database” available in HYMOS under “Managers” option. The opening window of this utility, illustrating import of transfer database to HYMOS database, is as shown in Fig. 4. The next screen shown as Figure 8.5 helps in identifying the transfer database which is tried to be imported by the user. Next a HYMOS database has to be specified, as shown in Figure 8.6, which is to receive data upon this import. For being able to import a transfer database it is required to specify the “import template”, as shown in Figure 8.7, on the basis of which the import would be carried out. A default import template copied as “...|HYMOS 4\System\ImportTemplate.mdb” at the time of installing HYMOS can be used for import of data from SWDES exported transfer database to HYMOS database. It is also possible to use any other user-defined template in case the transfer database is not in the SWDES transfer database format. At this stage, a comparison is to be made of the contents of the source and the target databases. The reports of this comparison is also available for reference to the user. This is as shown in Figure 8.8. After reviewing the report on this comparison, the import is finally made, as shown in Figure 8.9, by appropriately taking care of the common data in the source and the target databases. The final report of the import operation is available at this stage to see what actions have been carried out during import.

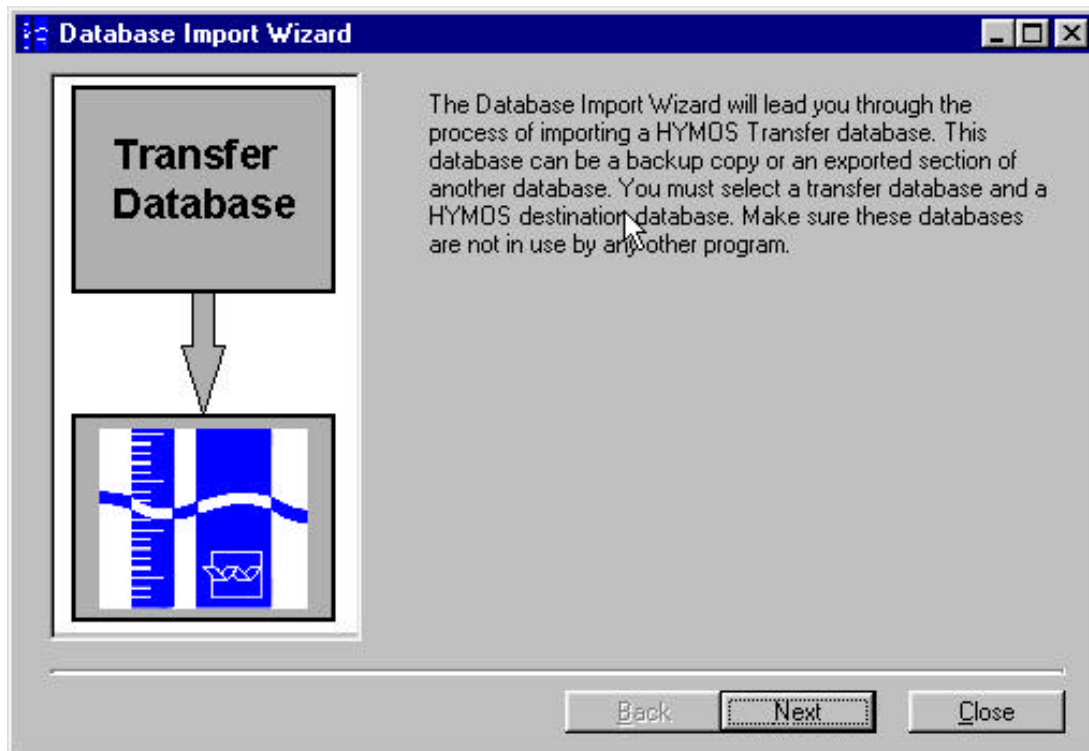


Figure 1.4: Layout of the opening screen for import of data from transfer database to HYMOS

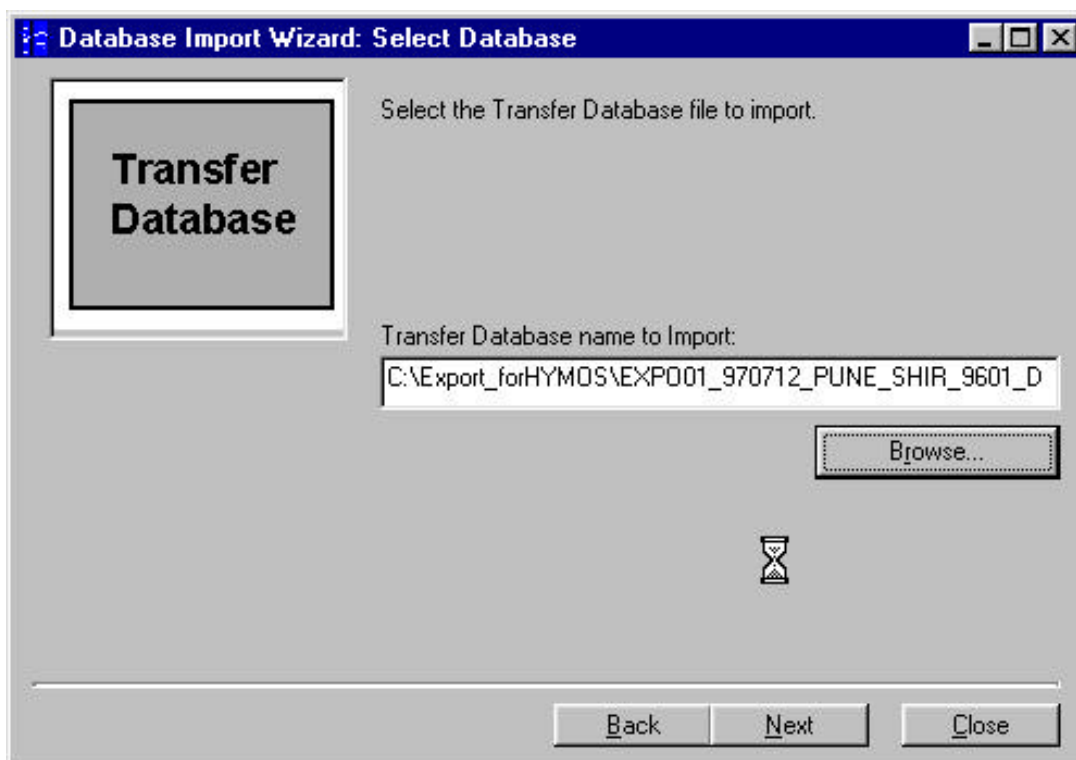


Figure 1.5: Layout of the screen for specifying transfer database during import of data into HYMOS

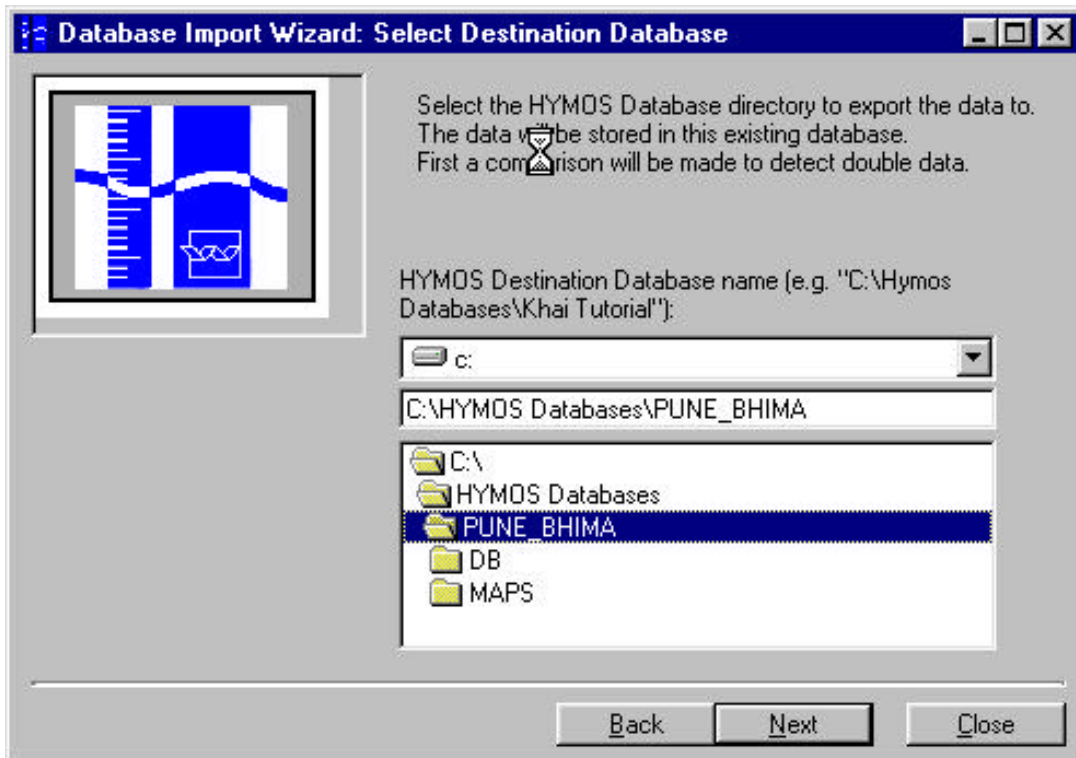


Figure 1.6: Layout of the screen for specifying the HYMOS database receiving data during import

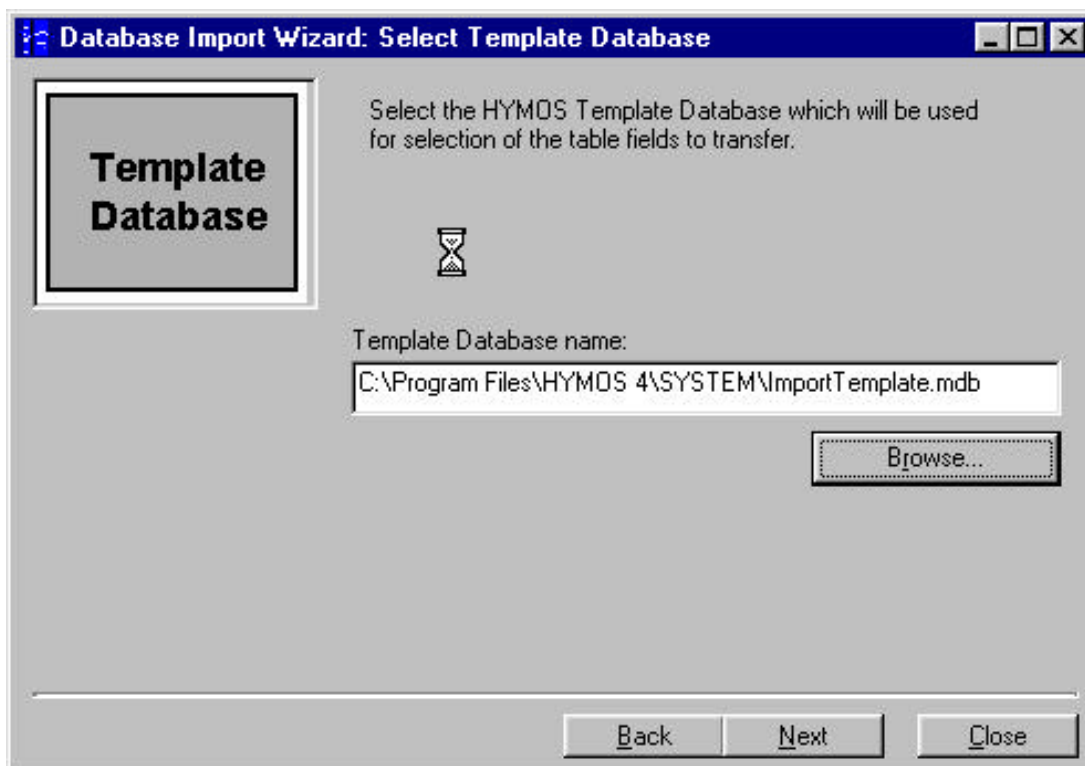


Figure 1.7: Layout of the screen for specifying the template to be used while importing data in HYMOS

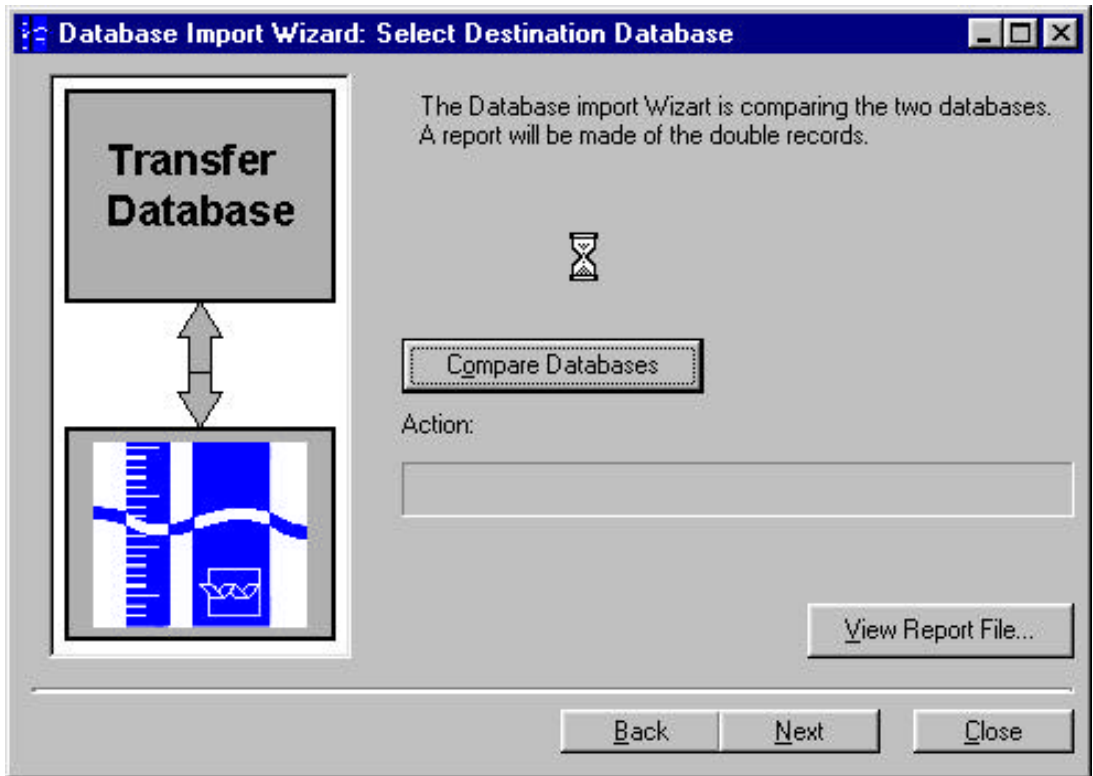


Figure 1.8: Layout of the screen for comparing the contents of transfer and HYMOS database

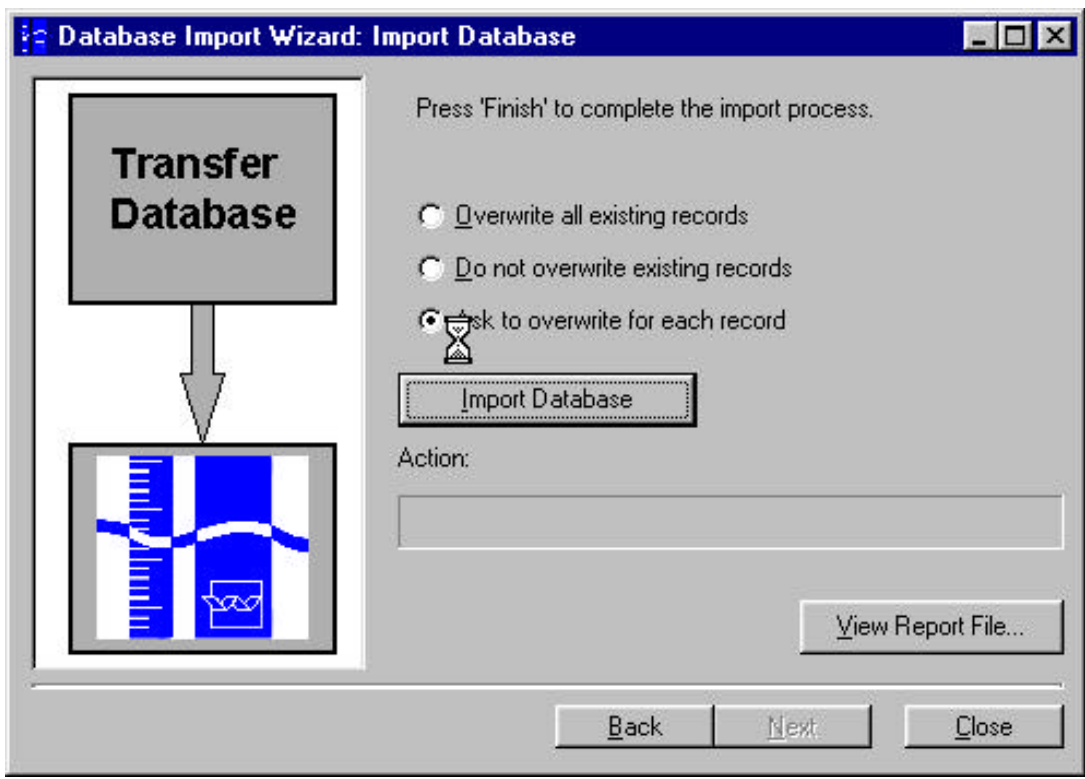


Figure 1.9: Layout of the screen for finally importing data in the HYMOS database

1.4 Transferring raw data from DDPCs to SDPCs/RDPCs

The raw data as transferred and available at the DDPCs are transferred to the SDPCs/RDPCs for reference during hydrological validation and more importantly for onward transmission to the SDSCs/RDSCs for the purpose of archival. Raw data from all the SDDPCs are first sent to the corresponding DDPCs and at each of the DDPCs these incremental data sets are consolidated in one single workarea for each SDDPC separately, as discussed earlier. From any DDPC, the raw data from these unified workareas (for each SDDPC) is transferred to the controlling SDPC/RDPC by making a transfer workarea of incremental data available beyond the last such transfer.

Use of “Fragmentation” option available in SWDES is made for making such incremental transfer data sets at the DDPCs. Normally, as a regular routine monthly transfer of incremental data sets from SDDPCs would be available around 13th of each month. After consolidation of such incremental data in the unified SWDES workareas, this data is transferred to the corresponding SDPCs/RDPCs (by 15th of that month). Fragmentation option of SWDES is used for making such transfer workareas. The making of such transfer workarea is explained earlier in the text. Such transfer workareas are made separately for the workareas available for each of the SDDPCs.

A uniform guideline may be followed for assigning file names to such transfer workareas being sent from the DDPCs to the controlling SDPCs/RDPCs. This will be highly beneficial in recognising the transfer workarea by merely knowing its filename. The filenames to be used for these transfer workarea are recommended to be based on: (a) a string “TRANnn”, (b) yymmdd and (c) name of the parent workarea as used at DDPC. Here “nn” in the string is any number used for adequately distinguishing different transfer workareas of the same date and “parent” workarea is the one from which the transfer is being made.

Thus the data required to be transferred from a DDPC to the SDPC/RDPC can be prepared as explained above. As mentioned earlier, the actual communication of these transfer workarea files to the SDPCs/RDPCs can be through any of the links prescribed under the Hydrology Project such as using physical media (preferably on CD), data transfer networks, telephone line etc.

At SDPCs/RDPCs, SWDES will be used for consolidating such incremental transfer raw datasets into respective SWDES workareas for each SDDPC of the state or region separately. “Consolidation” option is to be used to simply merge the contents of the incoming incremental transfer dataset into the respective existing SWDES workarea for the each SDDPC.

1.5 Transferring processed data from DDPCs to SDPCs/RDPCs

The incremental processed data sets validated every month at the DDPCs are promptly transferred (by 30th of every month) to the corresponding SDPC/RDPC for further hydrological and inter-agency validation and thereafter for submission of authenticated data to the SDSC/RDSC for dissemination and archival. As mentioned earlier, there would usually be one workarea in the secondary module, at the DDPCs, pertaining to the same drainage area (of the independent river). Only in rare cases, it may have two or more workareas for distinct sub-basins/zones of independent river basin/zone. From these workareas, data after necessary secondary validation, is regularly exported to an intermediate “transfer database” which is then sent to the SDPC/RDPC. Such “transfer databases” would then be used at SDPCs/RDPCs for importing the data in the corresponding HYMOS workareas.

1.5.1 Exporting data from HYMOS workarea to transfer database at the DDPCs

Export of data from HYMOS databases to the intermediate transfer database is accomplished using one of the utilities “Export Transfer Database” available in HYMOS under “Managers” option. The opening window of this utility, illustrating export of transfer database from HYMOS database, is as shown in Figure 9.10. The next screen, as shown as Figure 8.11, helps in identifying a HYMOS database from which the export is to be made. Next the transfer database which is tried to be created by the user during this export is specified, as shown in Figure 8.12. For being able to export data to a transfer database it is required to specify the “export template”, as shown in Figure 8.13, on the basis of which the export would be carried out. A default export template copied as “...|HYMOS 4\System\ExportTemplate.mdb” at the time of installing HYMOS can be used for export of data from a HYMOS database to a transfer database. It is also possible to use any other user-defined template in case the transfer database need to be in a different format. At this stage, the user can select the type of data which are to be exported, as shown in Figure 8.14. And following this step, the user is to specific the stations, from the total list of stations as shown in 8.15, for which the data is to be exported. Together with the stations to be exported, the time period between which the data is to be exported is specified, as shown in Figure 8.16, by selecting the required start and end dates. In the last, the export is actually carried out by pressing “Export Database”, as shown in Figure 8.17. The report of the export available on the same screen, stating what is exported and what is not exported, can be reviewed at this stage for reference. This completes the export of desired data from a HYMOS database to a transfer database.

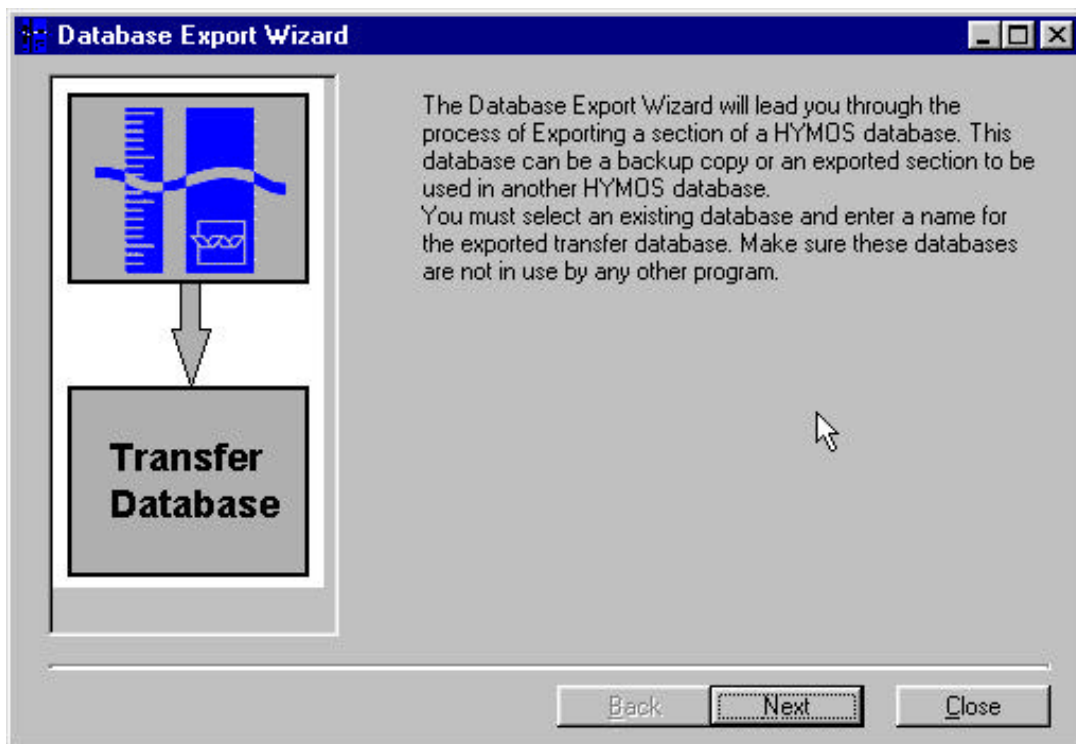


Figure 1.10: Layout of the opening screen for export of data from HYMOS to transfer database

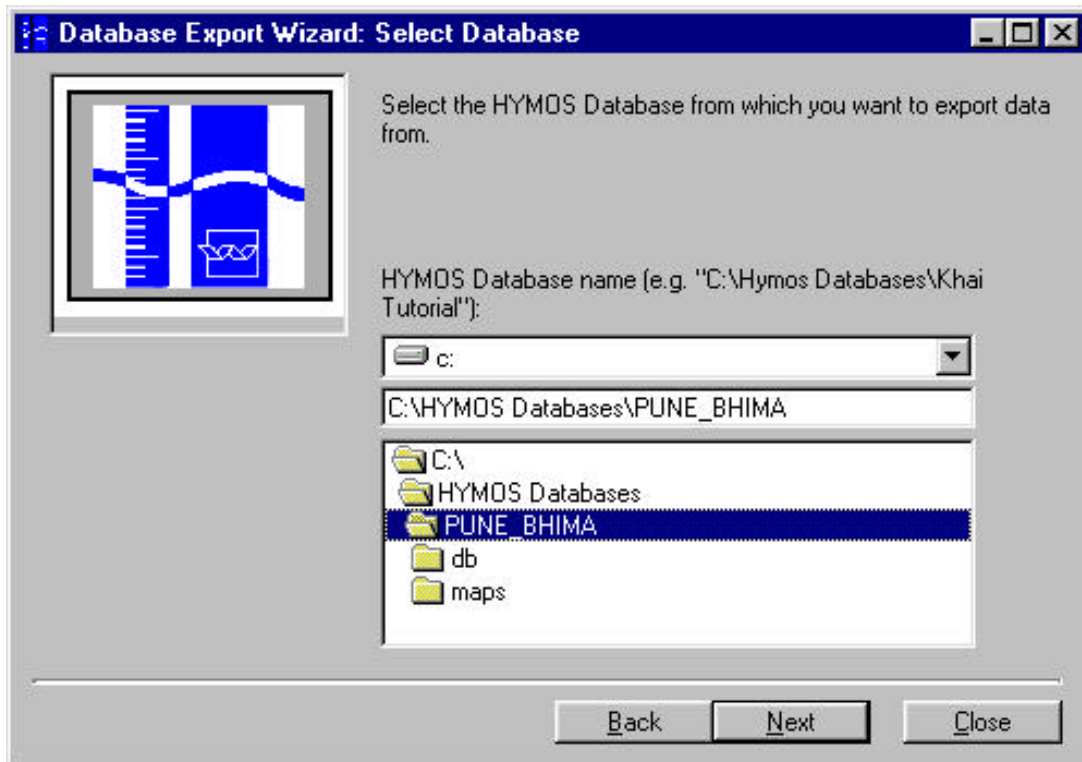


Figure 1.11: Layout of the screen for specifying HYMOS database during export of data into transfer database



Figure 1.12: Layout of the screen for specifying the transfer database to be created data during export

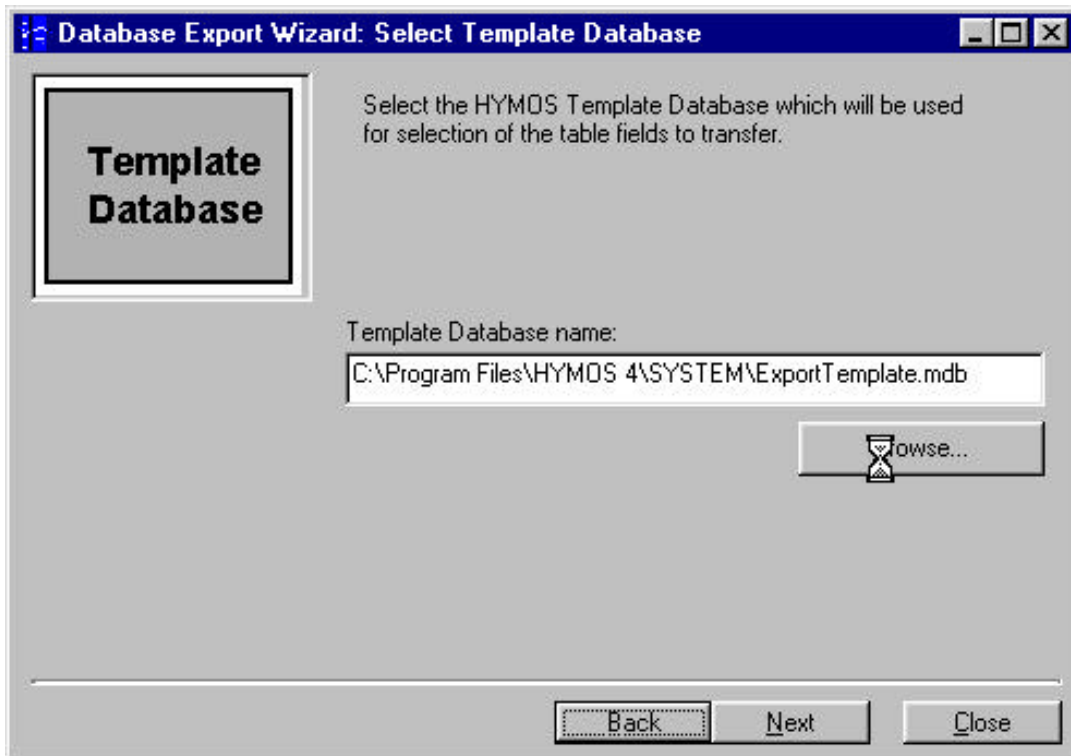


Figure 1.13: Layout of the screen for specifying the template to be used while exporting data from HYMOS



Figure 1.14: Layout of the screen for choosing the data types to be exported to the transfer database

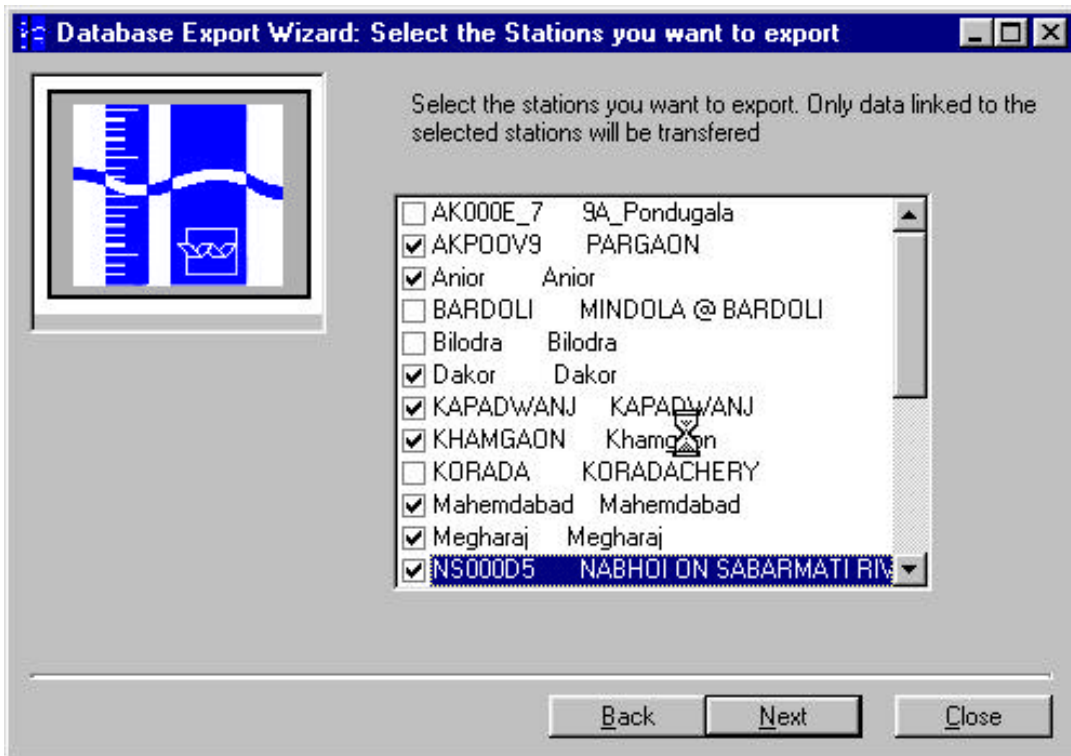


Figure 1.15: Layout of the screen for selecting the stations for which the data is to be exported

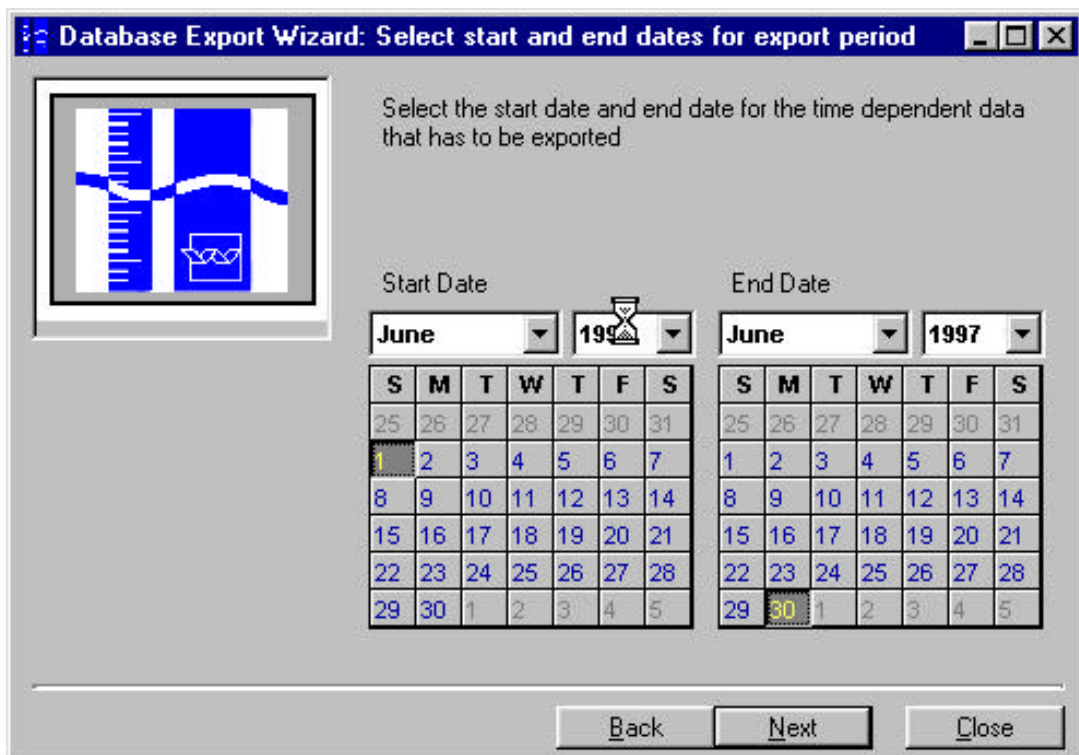


Figure 1.16: Layout of the screen for specified the period for export of data to the transfer database

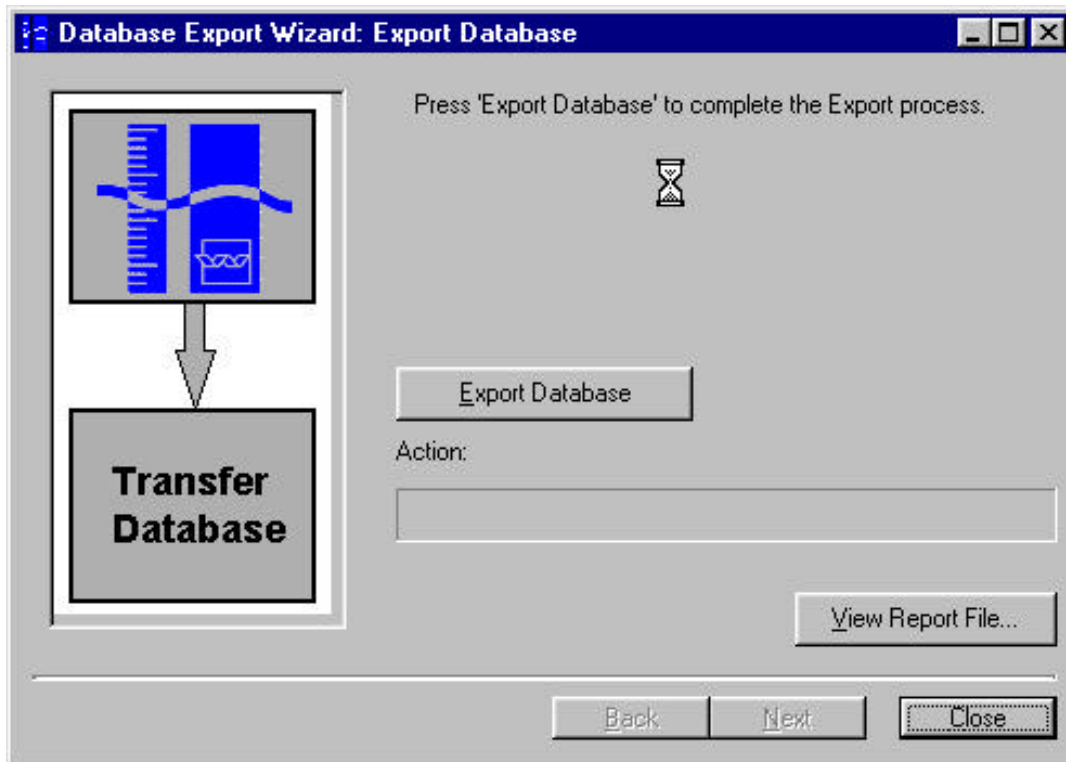


Figure 1.17: Layout of the screen for finally exporting the selected data to the transfer database

As a practice these transfer databases would be made at the DDPCs and would be sent to the SDPC/RDPC. At the SDPC such incremental datasets would be appropriately imported in the relevant basin's workarea and the dataset would be further validated and finalised. A uniform guideline is to be followed for naming these transfer databases for an easy recognition. The filenames to be used for these transfer databases are recommended to be based on: (a) a string "EXPOnn", (b) yymmdd and (c) name of the parent workarea. Here "nn" in the string is any number used for adequately distinguishing different transfer databases of the same date and "parent" workarea is the one from which the transfer is being made.

1.5.2 Importing data from a transfer database to HYMOS database at the SDPCs/RDPCs

Since HYMOS databases at DDPCs and SDPCs/RDPCs are based on the basin/zone or sub-basin concept and the former is generally a subset of the later, the transfer dataset(s) received from the DDPCs are to be just imported in the relevant HYMOS database. More often one or more DDPCs transfer databases would be the part of the same HYMOS database encompassing the basin area covered by those DDPCs. The procedure for import of these transfer databases into the HYMOS databases is exactly same as explained previously in section 3.2 except for the fact that these transfer databases have originated from HYMOS databases at DDPCs instead of from SWDES workareas at SDDPCs.