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Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea

AdriaMed Trawl Survey Information System (ATrIS): User Manual



AdriaMed Technical Documents No. 17



SCIENTIFIC COOPERATION TO SUPPORT RESPONSIBLE FISHERIES IN THE ADRIATIC SEA



Food and Agriculture Organization of the United Nations

Italian Ministry of Agriculture and Forestry Policies

AdriaMed

GCP/RER/010/ITA

AdriaMed Trawl Survey Information System (ATrIS): User Manual

by

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The conclusions and recommendations given in this and in other documents in the *Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea* Project series are those considered appropriate at the time of preparation. They may be modified in the light of further knowledge gained in subsequent stages of the Project. The designations employed and the presentation of material in this publication do not imply the expression of any opinion on the part of FAO or MiPAF concerning the legal status of any country, territory, city or area, or concerning the determination of its frontiers or boundaries.

ii <u>Preface</u>

The Regional Project "Scientific Cooperation to Support Responsible Fisheries in the Adriatic Sea" (AdriaMed) is executed by the Food and Agriculture Organization of the United Nations (FAO) and funded by the Italian Ministry of Agriculture and Forestry Policies (MiPAF).

AdriaMed was conceived to contribute to the promotion of cooperative fishery management between the participating countries (Republics of Albania, Croatia, Italy, Serbia-Montenegro and Slovenia), in line with the Code of Conduct for Responsible Fisheries adopted by the UN-FAO.

Particular attention is given to encouraging and sustaining a smooth process of international collaboration between the Adriatic Sea coastal countries in fishery management, planning and implementation. Consideration is also given to strengthening technical coordination between the national fishery research institutes and administrations, the fishery organizations and the other relevant stakeholders of the Adriatic countries.

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iii GCP/RER/010/ITA Publications

The AdriaMed Project publications are issued as a series of Technical Documents (GCP/RER/010/ITA/TD-00) and Occasional Papers (GCP/RER/010/ITA/OP-00) related to meetings and research organized by or conducted within the framework of the Project.

Occasionally, relevant documents may be translated into national languages as AdriaMed Translations (GCP/RER/010/ITA/AT-00).

Comments on this document would be welcomed and should be sent to the Project headquarters:

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Preparation of this document

The AdriaMed Trawl Survey Information System (ATrIS) is a computerized system, based on Microsoft Access[©] for organizing storing and undertaking the preliminary analysis of the dataset available after the AdriaMed trawl surveys. It was conceived and designed as a simple and common tool to store and perform basic processing of the data collected by the countries participating in the AdriaMed demersal trawl survey.

The software has been designed and developed with the kind collaboration of the Laboratory of Marine Biology of Fano (Italy), the Institute of Oceanography and Fisheries of Split (Croatia), the Laboratory of Marine Biology of Bari (Italy), the Fisheries Research Institute of Ljubljana (Slovenia), the Institute of Marine Biology of Kotor (Montenegro) and the Fisheries Research Institute of Dürres (Albania).

The scope of this manual is to provide users with guidelines on the various tools available to turn raw data into useful information. The following are summaries of the six chapters of this User's Manual: Chapter 1 contains the background information, Chapter 2 illustrates the System set up, and in Chapter 3 a general overview of ATrIS is given. Chapter 4 defines the data configuration rules and Chapter 5 explains the import/export routines. Chapter 6 illustrates how to input and retrieve data while Chapter 7 gives an overview of the analysis tools provided by the System. Finally in Chapter 8 some routines to check data consistency are illustrated.

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ABSTRACT

Through the FAO-AdriaMed Project the AdriaMed Trawl Survey Information System (ATrIS) has been developed as a simple and common tool to store and perform basic processing of the data collected by the countries participating in the AdriaMed demersal trawl survey. This document provides useful guidelines to ATrIS users. The objectives of the ATrIS are to facilitate storage, retrieval, updating, analysis and manipulation of trawl

surveys data including spatially referenced information; to build capacity to create, use and maintain a trawl survey database in each country; to facilitate sharing of trawl surveys data within and between countries in the Adriatic Sea. The ATrIS consists of 2 parts: i) a database (Access) for storing the spatial and monitoring data for each survey, with basic querying, updating and reporting capabilities. and ii) a spatial database that includes data stored directly within GIS (i.e. ArcView). Key concepts upon which ATrIS has been developed are regional management structure, database consistency management methods, capacity building for data analysis and GIS application and enhanced reporting capacity.

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1. Background information

1.1 AdriaMed Demersal Trawl Surveys

In the Adriatic, scientific bottom trawl surveys to monitor and assess demersal fishery resources have been carried out since the 1948-49 (Hvar Expedition). For the most part demersal survey sampling design could cover only national and international waters. Exceptions were the 1982-84 survey, jointly executed by Croatia and Italy in the Northern and Central Adriatic, and more recently, within the EU-funded MEDITS programme the whole Adriatic has been surveyed since 1996, with the exception of Montenegrin waters. Italy has been implementing demersal trawl surveys in national and international waters up to the territorial waters of the other coastal countries since 1985. A common approach is needed at regional level when the key demersal resources are straddling stocks across the boundaries between territorial seas and international waters where open access conditions apply. The consideration that the most important commercial stocks of the Adriatic are shared by the national fishing fleets makes it necessary their monitoring and assessment to be carried out over the whole Adriatic Sea.

During the 2nd Coordination Committee Meeting held in Slovenia (Portorož, 22-23 November 2000, AdriaMed 2001, GCP/RER/010/ITA/TD-04 refers) the "AdriaMed Trawl Survey", one of the proposed research activities, was regarded as being of prime interest; its aim was an eastward extension of the Italian demersal trawl survey to include Albanian, Croatian, Slovenian, and since 2004, Serbia and Montenegro waters. The major intentions were to collect, compile and process data following a common protocol prepared and agreed upon by all researchers involved; to carry out joint data elaboration and analysis and finally to make an appraisal of the status of demersal resources using stock assessment tools.

The programme was adopted with the participation of the scientists from four countries: Albania, Croatia, Slovenia and Italy. The programme has several objectives and among the principal aims are:

- 1) to describe the zoogeographic distribution and pattern occurrence of target species encountered and where possible the relationship of such patterns to observed environmental features (sea depth, sediments, temperature);
- 2) to estimate relative abundance indices for target species in time and space and finally, where possible to perform stock assessment.

Among the main tasks was the compilation of the index of relative biomass and abundance of shared commercial stocks and its geo-spatial variation within bathymetric strata as well as comparison between the two Geographical Sub-areas (GSA): northern and central (GSA 17) and southern (GSA 18) Adriatic Sea.

At the same time research work included issues related to the biology and population dynamics of target species such as: possible effects of fishing pressure on resource biodiversity, information on target species spawning and nursery areas, biomass distribution, as well as species vulnerability to the fishing gear.

1.2 Trawl Data

Three AdriaMed Trawl Surveys were performed in Autumn-Winter 2001/2002, 2002/2003 within international and national waters of Albania, Croatia and Slovenia and in Winter 2004 also comprising the territorial waters of Serbia-Montenegro. For the execution of the programme two vessels were used: chartered F/V "Pasquale e Cristina" in the southern Adriatic (GSA 18, Albania and Montenegro) and R/V "Andrea" in the central and northern Adriatic (GSA 17, Croatia and Slovenia).

The number of surveyed stations in the AdriaMed 2001-2002 programme, due to the available budget, was increased in the year 2003 in the waters of Albania and Croatia and adjacent international waters. The increment in the number of stations was also the consequence of direct interests and financial support of national institutes. In the case of Albania, the number of stations was increased from 18 (2001-2002) to 31 in 2003, and in the case of Croatia from 22 (2001-2002) to 42 in 2003. The number of stations in Slovenian national waters remained constant at two stations. In Montenegro the sampling stations were 20. As example, sampling stations of AdriaMed trawl survey 2003 are given in Table 1 and Figure 1.

The AdriaMed surveys were complementary to the Italian "Gruppo Nazionale Demersali" (GRU.N.D.) national survey programme in the western Adriatic.

A list of 13 target species was identified taking into consideration the list of priority species whose stocks are shared in the Adriatic Sea as identified by the AdriaMed Working Group on Demersal Resources, and reported in Annex B, Table 5 of the Working Group report (AdriaMed, 2000; Group A).

The AdriaMed surveys covered the trawlable area of the eastern Adriatic Sea, continental shelf and upper slope, from 10 to 400 m bottom depth. With regard to station selection and geographical allocation, random depth-stratified sampling design was applied, the same as is used in the case of the Mediterranean International Trawl Survey (MEDITS) Programme in the Adriatic (Anonymous, 1998). Strata were defined according to the following bathymetric limits: 10-50, 50-100, 100-200 m (GSA 17) and 200-800 m (GSA 18). The sampling procedures used are similar to and coherent with those of the Mediterranean International Trawl Survey (MEDITS) Programme (Anonymous, 1998; Bertrand, 1995, Bertrand *et al.*, 1996).

Catch in weight and number of target and non-target species was recorded and catch rates obtained. For target species biological data such as sex, gonad maturity and length-size composition were recorded. Sampling and sub-sampling procedures utilised "raising factors" in assessment of total numbers individuals caught per species. Data were entered into specially created sheets included as Annex C.

The haul logbook held the following information: haul start and end positions and time, total catch weight, bottom depth at haul start and at haul end as well as length of trawl wire released into the sea. Standard haul duration was 60 minutes irrespective of the trawling depth (stratum). The Italian commercial bottom trawl net ("tartana") used in the GRU.N.D.

programme was constantly utilised with standard auxiliary spare parts (bottom ropes, floating balls, knotless cod-end stretched mesh size was of 20 mm). Horizontal net opening, before surveys, was measured by "Scanmar"-Norway wireless transducers, in stratum of 50-100 meters. In this case the horizontal net opening was 24,2 meters and vertical opening around 1 meter.

Table 1.1 - Coordinates of sampling stations in Albanian (A), Croatian (B) and Slovenian (C) waters and adjacent international waters during the ADRIAMED 2003 trawl survey.

A – Alballia									
OT ATION	COORDINATES								
STATION	BEGINNING	OF HAUL	END OF HAUI	L	DEFIT				
CODE	φΝ	λΕ	φΝ	λΕ	(111)				
AATS0301	41°35.30'	19°20.57'	41°38.02'	19°22.27'	45				
AATS0302	41°07.47'	19°22.39'	41°04.56'	19°23.03'	41				
AATS0304	41°32.24'	19°15.18'	41°35.03'	19°15.24'	84				
AATS0306	41°26.24'	19°15.37'	41°29.21'	19°15.27'	97				
AATS0307	41°20.39'	19°08.14'	41°18.14'	19°08.37'	96				
AATS0308	41°12.23'	19°21.03'	41°09.26'	19°20.56'	62				
AATS0310	40°48.14'	19°11.32'	40°45.01'	19°11.48'	86				
AATS0311	40°44.34'	19° 11.04'	40°42.20'	19°10.44'	89				
AATS0312	40°51.38'	19°11.55'	40°48.47'	19°11.21'	89				
AATS0313	40°55.18'	19°12.05'	40°52.17'	19°12.20'	90				
AATS0314	41°26.57'	19°07.04'	41°24.08'	19°06.47'	118				
AATS0315	41°23.20'	19°07.22'	41°20.55'	19°08.12'	111				
AATS0316	40°52.53'	19°09.22'	40°50.04'	19°09.32'	104				
AATS0317	40°42.27'	19°09.33'	40°39.18'	19°09.27'	119				
AATS0319	40°38.30'	19°09.40'	40°35.17'	19°11.70'	140				
AATS0321	40°39.11'	19°07.58'	40°41.54'	19°06.14'	168				
AATS0322	40°36.17'	19°08.60'	40°39.06'	19°07.56'	174				
AATS0323	40°34.48'	19°11.02'	40°31.45'	19°11.58'	148				
AATS0325	41°07.00'	18°52.08'	41°08.35'	18°52.47'	292				
AATS0326	41°02.32'	18°53.47'	41°05.05'	18°52.28'	284				
AATS0327	40°43.58'	18°59.26'	40°46.22'	18°58.29'	328				
AATS0328	40°34.53'	19°05.32'	40°37.55'	19°04.53'	309				
AATS0330	40°31.23'	19°06.06'	40°34.17'	19°05.40'	310				
AATS0331	40°28.12'	19°08.33'	40°30.52'	19°08.00'	295				
AATS0332	40°55.11'	18°48.48'	40°57.24'	18°47.08'	534				
AATS0333	40°51.50'	18°50.46'	40°54.11'	18°49.53'	534				
AATS0335	40°48.01'	18°54.05'	40°50.16'	18°52.02'	502				
AATS0336	40°40.02'	18°59.54'	40°42.05'	18°58.32'	545				
AATS0338	40°36.21'	19°00.22'	40°39.01'	19°00.11'	526				
AATS039	40°33.00'	19°01.08'	40°30.42'	19°02.09'	545				
AATS040	40°29.53'	19°03.08'	40°27.39'	19°04.40'	537				

A – Albania

В-	Cro	atia

STATION					
NUMBER	BEGINNI	NG OF HAUL	END	DEPTH	
	φΝ	λΕ	φΝ	λΕ	(Ш)
CATS0301	44°18.37'	14°58.85'	44°16.15'	14°57.57'	47.8
CATS0302	43°49.11'	15°26.70'	43°45.63'	15°28.41'	46.3
CATS0303	43°50.15'	15°10.02'	43°52.97'	15°07.09'	52.1
CATS0304	43°59.76'	14°59.07'	44°01.73'	14°56.89'	60.6
CATS0305	44°24.66'	15°11.71'	44°27.17'	15°07.91'	60.8
CATS0306	44°31.48'	15°03.38'	44°32.96'	15°00.65'	76.7
CATS0307	44°37.35'	14°56.06'	44°39.59'	14°53.27'	200.5
CATS0308	44°47.10'	14°52.01'	44°49.32'	14°50.85'	186.0
CATS0309	44°55.40'	14°52.27'	44°57.01'	14°51.48'	169.5
CATS0310	45°04.69'	14°47.09'	45°06.94'	14°44.33'	128.5
CATS0311	45°10.32'	14°26.57'	45°06.87'	14°24.33'	81.7
CATS0312	44°04.36'	14°16.34'	45°01.36'	14°16.84'	110.0
CATS0313	44°48.89'	14°13.87'	44°46.06'	14°11.69'	141.5
CATS0314	44°42.42'	14°04.46'	44°41.20'	14°00.76'	140.5
CATS0315	44°26.61'	14°27.08'	44°24.55'	14°28.72'	118.5
CATS0316	44°15.76'	14°36.01'	44°13.72'	14°38.69'	111.5
CATS0317	44°11.66'	14°40.33'	44°10.10'	14°43.59'	119.5
CATS0318	44°33.55'	14°41.64'	44°36.98'	14°38.29'	132.0
CATS0319	43°33.09'	15°31.82'	43°31.37'	15°27.04'	139.5
CATS0320	43°30.80'	15°34.00'	43°31.65'	15°38.96'	152.5
CATS0321	43°29.92'	15°41.90'	43°27.58'	15°44.58'	160.0
CATS0322	43°26.15'	15°55.25'	43°25.54'	15°58.79'	156.0
CATS0323	43°16.26'	16°19.84'	43°16.06'	16°18.77'	76.5
CATS0324	42°57.55'	16°24.86'	42°56.77'	16°22.01'	83.8
CATS0325	42°49.72'	16°13.13'	42°50.63'	16°10.49'	53.8
CATS0326	42°52.11'	16°00.90'	42°53.55'	15°58.68'	32.0
CATS0327	43°07.07'	15°52.83'	43°08.67'	15°54.25'	24.1
CATS0328	43°09.70'	16°00.26'	43°10.27'	16°02.97'	33.9
CATS0329	42°47.20'	16°35.35'	42°45.72'	16°36.67'	72.3
CATS0330	42°40.43'	17°18.15'	42°39.72'	17°20.42'	47.8
CATS0331	42°38.81'	17°27.56'	42°38.79'	17°30.17'	46.3
CATS0332	42°37.21'	17°35.62'	42°36.54'	17°38.49'	52.1
CATS0333	42°35.08'	17°45.95'	42°34.66'	17°48.46'	60.6
CATS0334	42°33.72'	17°53.71'	42°33.54'	17°56.37'	60.8
CATS0335	42°47.65'	17°35.27'	42°47.91'	17°32.68'	76.7
CATS0336	42°49.40'	17°28.53'	42°50.02'	17°25.82'	200.5
CATS0337	43°04.01'	17°06.56'	43°04.70'	17°08.45'	186.0
CATS0338	43°01.29'	17°20.76'	43°00.26'	17°22.76'	169.5

CATS0339	42°54.79'	17°34.83'	42°56.04'	17°31.04'	128.5
CATS0340	43°03.23'	17°20.12'	43°04.62'	17°18.61'	81.7
CATS0341	43°23.01'	16°46.71'	43°23.18'	16°44.23'	110.0

C - Slovenia

GTATION		COO	RDINATES		DEDTH
SIATION	BEGINN	ING OF HAUL	END	DEPTH	
NUMBER	φΝ	λΕ	φΝ	λΕ	(Ш)
SATS0301	45°36.29'	13°39.11'	45°35.94'	13°36.52'	23.2
SATS0302	45°35.10'	13°34.14'	45°34.11'	13°31.49'	23.6



Figure 1.1. Geographical allocations of the stations in the national and adjacent international waters of Albania, Croatia and Slovenia sampled during the AdriaMed 2003 bottom trawl survey.

1.3 The AdriaMed Trawl Survey Databank (Microsoft Excel[©] version)

Since the AdriaMed trawl surveys were carried out, the need to have the large amount of collected data easily available for use was identified. The creation of a regional logical databank holding all the data collected by country and for the whole region was undertaken. The idea was to design a simple system to store the available data and which would facilitate basic analysis. The proposal was illustrated at the Fourth Meeting of the AdriaMed Coordination Committee held in Split, Croatia, December 2002 (AdriaMed, 2003). On that occasion it was agreed that it would be necessary and appropriate to finalize the logical

databank proposed by the Project so as to hold the whole data set obtained from the execution of the bottom trawl survey in 2001/02.

One of the main objectives was to create a basic and useful tool common for the AdriaMed countries participating in the survey and that would allow the facilitation and standardisation of the data entry work.

The creation of the data bank allowed for:

- Effective survey data sharing among the participating countries;
- Implementation of common data collection protocol;
- Standardization of the data entry procedures;
- Standardization of primary data compilation and reporting.

Taking into consideration that basic analysis of the rough data is the starting point for any stock assessment and resource appraisal work, a system was designed that would be user-friendly even with non specialized users. The Project chose Microsoft Excel[©] software because of the following characteristics:

- ✓ Widespread accessibility and familiarity of use among scientific staff of all Adriatic countries;
- ✓ Straightforward application and maintenance;
- \checkmark Possibility for easy data exchange with other common software systems;
- ✓ Simple export/import of data to and from other data file formats as Microsoft Excel[©] is usually distributed with a package of other Microsoft software.

The Excel[©] system offered few basic utilities to run simple queries; with a few steps it allows the user to visualize tables and charts of the data filtered (Milone *et al.*, 2004). The Excel[©] application was distributed to the National Focal Points and to the research institutes participating in the AdriaMed demersal survey programme and it was used to store and run the basic analysis of the AdriaMed Trawl Survey 2003/2004 data.

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					Gen	Sp		12-3	112-3	1112-3	IV2	Tot.	lz	lla	III2	IV2	Tot.	Sex not	GR	Raising	Raised
1	Partner	Haul	Vessel	Date	Code	Code	cm	М	M	M	М	М	F	F	F	F	F	extab	TOT	factor	total
2	ALB	A3	PACRI	07/11/01	MERL	MER	10														
3	ALB	A3	PACRI	07/11/01	MERL	MER	11														
4	ALB	A3	PACRI	07/11/01	MERL	MER	11											1	1	4	
5	ALB	A3	PACRI	07/11/01	MERL	MER	12											3	3	4	
6	ALB	A3	PACRI	07/11/01	MERL	MER	12									-		2	2	4	
7	ALB	A3	PACRI	07/11/01	MERL	MER	13											8	8	4	
8	ALB	A3	PACRI	07/11/01	MERL	MER	13										1	2	2	4	
9	ALB	A3	PACRI	07/11/01	MERL	MER	14											9	9	4	
10	ALB	A3	PACRI	07/11/01	MERL	MER	14											1	1	4	
11	ALB	A3	PACRI	07/11/01	MERL	MER	15											6	6	4	
12	ALB	A3	PACRI	07/11/01	MERL	MER	15														
13	ALB	A3	PACRI	07/11/01	MERL	MER	16											4	4	4	
14	ALB	A3	PACRI	07/11/01	MERL	MER	16		1			1		2			2			4	
15	ALB	A3	PACRI	07/11/01	MERL	MER	17		1			1		1			1			- 4	
16	ALB	A3	PACRI	07/11/01	MERL	MER	17		2			2								4	
17	ALB	A3	PACRI	07/11/01	MERL	MER	18							1			1			4	
18	ALB	A3	PACRI	07/11/01	MERL	MER	18		2			2		1			1			4	
19	ALB	A3	PACRI	07/11/01	MERL	MER	19								-						
20	ALB	A3	PACRI	07/11/01	MERL	MER	19							2			2			4	
21	ALB	A3	PACRI	07/11/01	MERL	MER	20														

Figure 1.2. Example of a working spreadsheet of the AdriaMed application, based on Excel[®].

1.4 The AdriaMed Trawl Survey Information System – ATrIS (Microsoft Access[©] version)

Throughout the development phase of the AdriaMed Trawl Survey Databank, many valuable suggestions and comments were received from experts collaborating with AdriaMed and were duly taken into account. The logical next step was the migration of the Excel[©] application on a Microsoft Access[©] platform, better suited to hold the large data set expected to be available in the near future (with the AdriaMed Trawl Survey 2004). The structure for the AdriaMed Trawl Survey Information System (ATrIS) has been designed to be simple, yet flexible. The objective was to create a simple database structure that could accommodate a wide range of data types. The new application is also easily linkable with GIS application. The software environment (Access) that was chosen was the one which makes it very easy to move data from one format to another (e.g. between Access and ArcView[©], or between Access and Excel). The ODBC standards were used, a programming interface which enables applications to access data within database management systems that use SQL (structured query language) as a data access standard. This also allows it to seamlessly interact with tables and queries from Access in ArcView.

The objectives of the ATrIS are as follows:

-to facilitate storage, retrieval, updating, analysis and manipulation of trawl surveys data including spatially referenced information;

-to build capacity to create, use and maintain a trawl survey database in each country; and -to facilitate sharing of trawl surveys data within and between countries in the Adriatic Sea.

The ATrIS consists of 2 parts (Figure 1.3):

--A database (Access) for storing the spatial and monitoring data for each survey, with basic querying, updating and reporting capabilities. and

--A spatial database that includes data stored directly within GIS (i.e. ArcView).



Figure 1.3. Basic scheme of ATrIS structure.

1.5 Some key concepts of ATrIS

Hereunder some key concepts upon which ATrIS has been developed are summarized.

-- **Regional management structure.** It is vital that data access rules and procedures, and preferred data formats be developed or suggested by the countries rather than imposed by others. ATrIS was developed on request of the AdriaMed Adriatic experts and taking into a consideration the problems arising in data sharing, this led to the creation of a very flexible application. Moreover the active involvement by scientists in the improving and testing phase would gave a regional perspective to ATrIS.

-- Database consistency management methods

The general objectives of designing data entry functions are to establish consistency of data entry transactions, ensure compatibility of data entry with data display and provide flexibility of user control of data entry. Data validation is developed based on the data management/data validation plan and data specifications. They include several types of listings as well as queries. They cover, though are not limited to, the verification of out-of-range values and inconsistencies between data and protocol compliance checks. In ATrIS checking data consistency is done in three steps:

- *i)* Controlled data entry: a validation programme that verified field consistencies to identify records with errors (range checks, internal and external table look-up, rekey verification...)
- *ii) Tracking of individual changes:* automatic attribution of individual IDs, verification of household and individual IDs, using message boxes for warnings.
- *iii) Illegal data checks*: Illegal data are variable values or combinations of values that are literally impossible for the actual phenomenon of interest; ATrIS uses several filters to detect illegal data (e.g. keypunch errors; illegal data filter programs; detection of outliers in samples; and detection of outliers and leverage points in simple linear regression)

The development and application of these methods of consistency management has great potential to improve the quantity and quality of data provided, also for decision support for management.

-- Capacity building for data analysis and GIS application

ATrIS provides basic querying, updating and reporting capabilities with the possibility to support a first basic data analysis based on GIS.

The technical capacity to analyse data is built up providing two main analysis types:

- i) *Data analysis:* a system of queries that allows the user to calculate biomass and abundance indexes, to chart length frequency distribution and maturity and sex distribution;
- ii) *GIS map creation:* some basic GIS tools which provide the visualization of survey data. These tools represent an approach to developing meaningful, quantitatively

reliable and presentable thematic images. Moreover the final release of the trawl survey data bank application includes a digital chart (scale 1:250000) of the Adriatic Sea obtained through the cooperation of national hydrographical institutes.

-- Enhanced reporting capacity

Database management systems are developed primarily for generating reports. A key function of ATrIS is the ability to generate tables and graphic reports of the selected data. Reports are available in a printer format and contain all fields and records that occur in the table or query that was used.

The possibility to create a report gives the opportunity to:

- --give a general idea of the activities carried out during the survey
- --facilitate the data storing
- --facilitate data control
- --improve the daily activities of data research and recording
- --facilitate the organization of data.

This automation can also be remarkable timesaving tool for users who are required to produce regular data reports and to review or plan a new survey.

1.6 Introduction to ATrIS

In the following chapters each sections will be dealt with, starting with the Setup. In the Figure 3 a flowchart to follow during the start up of the application is given. The chapters will be treated in the same order.



Step 1 -- SET UP

As for every application ATrIS must be installed on a PC following a Set Up procedure. The procedure is illustrated step by step in chapter 2 and will guide users to correctly install the application.

Step 2

Once the application is installed ATrIS can be run on a PC: simply open on the menu bar the file ATrIS and the database will ask for a username and password. In chapter 2 all the actions that should be carried out to open the application are also indicated

Step 3-- DATA CONFIGURATION

Once the application has been opened a series of configurations must be performed to use ATrIS: the configuration should be run each time a new set of data is inserted in the database. Please note that without the correct data configuration the database is not able to

detect/analyze the data. The data configuration is given in chapter 4: all the necessary actions are illustrated guiding the users to setup the data codification system.

Step 4 and 5 -- IMPORT/EXPORT DATA-- DATA INPUT AND RETRIEVAL

The next logical step, after the data configuration, is to insert data in the database: the import procedure or the simple data entry are both options contemplated in ATrIS. Chapter 5 and chapter 6 illustrate the import/export and the data retrieval.

Step 6 – DATA ANALYSIS

Once the data are in the database, data analysis can be performed. ATrIS provides some simple tools for the basic processing of data and some features for some GIS applications. Chapter 7 illustrates the basic data analysis tools provided by ATrIS.

Step 7--CONSISTENCY CONTROL

ATrIS has a powerful system of error control and checks of data consistency which help users to perform data control. Chapter 8 displays the checking data consistency tools.

2 SET UP and Installation of the Suite "AdriaMed Trawl Information System" (ATrIS)

The package comes with the User Manual and a CD-ROM. The following minimum configuration is required:

--Microsoft Access (version used to develop the Suite ATrIS), (the system has bee tested for Microsoft Windows 1998, 2000, XP, Xme but has not yet be tested on MSWindow 95)

--Esri Software ARCVIEW ver.3.2x or higher**.

--1024x768 high resolution monitor**

The CDROM contains two folders with the two versions of the ATrIS application developed on Microsoft Access 1997 (97) and Microsoft Access 2000 (2000).

For MSAccess 1997 use the ATrIS 97 version. For MSAccess 2000 or XP please use ATrIS 2000.

The following procedures should be performed:

- 1) Open the CD-ROM
- 2) Open the folder you want to install (e.g. 97)
- 3) Install ATrIS Server (e.g. ATrIS_SERVER.exe)
- 4) Install ATrIS Client (e.g. ATrIS_CLIENT97.exe)
- 5) Launch ATrIS from the START Menu Bar
- 6) Set up the ATrIS Reference Files
- 7) Open ATrIS application
- 8) Insert User name and Password

To install the system simply follows the indication in the following paragraphs. Please note that a different installation should be performed if a STAND ALONE or a NETWORK installation can be set up.

2.1 Stand Alone Installation

If your PC is not part of a LAN, Local Area Network, you should install both the client and server side of the Suite ATrIS on your PC or, on each PC. See para 2.3 for Server Installation and 2.4 for Client Installation and 2.8 for updating of the data archive.



2.2 Network Installation

If your PC is part of a LAN you should perform a Network installation: in this case the installation of the server side of ATrIS is carried out just on one PC. The procedure for a network installation is the following:

- a) Select a PC which will be considered the Server PC. On this PC install ATrIS_Server.exe (see para 2.3 for Server installation).
- b) On the other PC (the client PC) install only the Client side of ATRIS (ATrIS_Client.exe, see para 2.4 for Client Installation)
- c) On each PC Client in the SET UP (see para XX) link the Client to the Server (indicate the right path of the ATrIS_S.mde in the DATABANK field).
- d) On the PC Server (not on the PC client) activate the Sharing Property of the ATrIS Folder (see para 2.3.1)



2.2.1 PC Server Installation

Double click on the file **ATrIS_Server.exe:** it will automatically install the file **ATrIS_S.mde**, the only component of the server side. This file contains the data consulted by the PC client. The procedures for the installation are as follows:

1) An introduction mask will introduce to the installation procedure. Click on NEXT

	Intro	oduction		
Welcome to th	is setup progra	em.		
(t is strongly r programs befo	ecommended t pre running this	hat you exit all setup progran	Windows n.	
Click Cancel to are running, Y complete the i	o quit Setup an ou may run the nstallation.	d then close an e setup prograr	y program you n again to	I
Click Next to a	ontinue with th	ne Setup progra	am.	
	<u>N</u> ext >	1	⊆ancel	

2) The Set UP procedures will automatically create a directory on C (C:\\ATRIS\Server). Please take note of the installation path: you should link the server PC to the Client PC/PCs (see para 2.7). Click on NEXT.



3) The following mask gives the copyright information. Please read it carefully before proceeding in the installation and click YES if you agreed to the above terms of agreement.

ADRIAMED TRAWL INFORMATION SYSTEM	2
Copyright Informations	
Permission to make digital or hard copies of part or all of this work for personal or classroom use is hereby granted without fee and without a formal request provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and full citation on the first page. Copyright for components of this work owned by others than FAO-AdriaMed must be honoured. To copy otherwise, to republish, to post on servers, or to redistribute to lists, requires prior specific permission and/or fee.	•
o you accept all the terms of the this License Agreement f you choose No, Setup will close.	?
< Back Yes No	

4) When the following mask is opened the default path of the destination folder will be displayed. Automatically the system will create the folder SERVER under the ATrIS Application (C:\\ATrIS\Server). To modify the path, click on Browse and select the new directory in which you would like to install the Server side.

Please note that the installation path displayed in this mask is the same path that should be inserted during the SETUP to link the PC Server and the PC Client.

WARNING. Do not use a name directory with space between words (e.g. do not put the ATrIS application under Program Files). If you like to create a new directory please use the underscore symbol (e.g. to create the "my software" directory write it as my_software). Click on NEXT

🗟 Adriamed trawl informa	TION SYSTEM						
Select the destination folder							
C:\ATrIS\Server							
	Browse						
Setup will install this product in the speci	ified folder.						
To install in this folder click Next.							
To install in a different folder, click Brow another folder.	se and select						
Required space: 1008 Kb - Free space	: 18.29 Gb						
< Back	Cancel						

5) The SETUP application will then summarize the SETUP settings. Click on Install to begin the installation.

Start copying file	5
Setup has enough information to start c files.	opying the program
If you want to review or change any se	ttings click Back.
If you are satisfied with the settings, cli copying the files.	ck Install to begin
SETUP SETTINGS SUMMARY:	
Colorbod options:	ㅋ
Selected options: Basic files	
Selected options: Basic files Destination:	
Selected options: Basic files Destination: C:\ATrIS\Server\ Space required:	Ē
Selected options: Basic files Destination: C:\ATrIS\Server\ Space required: 1008 Kb	Î
Selected options: Basic files Destination: C:\ATrIS\Server\ Space required: 1008 Kb Space available:	

6) Click YES to start the installation.



7) Once the system files are all copied a mask will be shown. Click on FINISH.



2.2.1.1 PC Server Sharing Properties

To define the sharing properties on the PC Server the procedures is as follows:

- 1) Click on the ATrIS Folder with the right button of the mouse. A window will open.
- 2) Click on SHARING
- 3) Select the Sharing folder and check the filed SHARE THIS FOLDER
- 4) Click on Apply and then on OK

Program Files		ATrIS Properties	<u>? ×</u>
ATrIS File Folder Modified: 24/01/2005 17.00 Attributes: (normal) Created: 24/01/2005 16.59 Accessed: 26/01/2005 16.37 Owner: Administrators	ATT Explore Search Cor WinZip Scansione con	General Web Sharing Sharing Security You can share this folder among other users on you network. To enable sharing for this folder, click Sh folder. O Do not share this folder Share this folder Share this folder Share name: ATrIS Comment:	ur are this
Displays the properties for sharing the sel 	Cut Cut EPSi Copy ecte Create Shortci Delete Rename Properties	User limit: Maximum allowed Mallow Users Users Users To set permissions for how users access this folder over the network, click Permissions. To configure settings for Offline access to this shared folder, click Caching.	ons
		OK Cancel	Apply

2.2.2 PC Client installation

On the CD-ROM double click on ATrIS_Client.exe file to start the installation. The procedure for the installation of ATrIS on PC client is the following:

1) An introduction mask will introduce to the installation procedure. Click on NEXT



2) The following mask gives the copyright information. Please read it carefully before proceeding in the installation and click YES if you agreed to the above terms of agreement.

2	Copyright Information	
ar Tara Tara Ta	Permission to make digital or hard copies of part or all of this work for personal or classroom use is hereby granted without fee and without a formal request provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and full citation on the first page.	
	Copyright for components of this work owned by others than FAO-AdriaMed must be honoured. To copy otherwise, to republish, to post on servers, or to redistribute to lists, requires prior specific permission and/or fee.	•
	Do you accept all the terms of the this License Agreement?	
	If you choose No, Setup will close.	

3) When the following mask will be opened the default path of the destination folder will be displayed. Automatically the system will create the folder CLIENT under the ATrIS Application (C:\\ATrIS\CLIENT).

To modify the path, click on Browse and select the new directory in which you would like to install the Client side.

Please note that the installation path displayed in this mask is the same as that which should be inserted during the SETUP to link the PC Server and the PC Client.



4) The Set Up will add an icon to the Program folder on the desktop BAR of your PC. The default name is ATrIS\Client. Click on NEXT. Please note that you may type a different folder name.

	S	elect Progra	am Folder
Set liste You the	up will add pr d below. may type a existing fold	rogram icons t new folder na er list.	to the Program Fold ame or select one fr
A	rIS\Client		
Ac Ac An AT ES Se St	essories Menu Creat EMenu Integ azon.com /IS XI UpBuild v2 rrtup	or rator	
Ē	Don't create	any icons	

5) The SETUP application will then summarize the SETUP settings. Please check if the Space required is compatible (lower) with the Space available on the PC. Click on Install to begin the installation.



6) Click YES to start the installation.

ATrIS\(Client setup	
Z	This will start Are you sure	the installation process. ?
	Yes	No

7) Once the system files are all copied a mask will be shown. Click on FINISH.



Once the installation is completed the ATrIS icon will be displayed on the Menu Bar of your desktop.

Shut Down	👼 Netscape 7.0	•
	👼 ATrIS	🔸 🔚 Client 🔸 🔛 ATrIS Client 🔪
🏽 🔀 Start 🛛 🗹 🖳 🧶 🥔 🐨 🔂 🖶	👼 Real	•

2.2.2.1 Update the PC CLIENT

Please note that if you are updating the PC Client (and the ATrIS directory is already on your PC) the following mask will be displayed. Click on Yes to continue the update procedures following the step 1-7 above illustrated. Please note also that since this operation is an update procedure you cannot change the installation directory.



1) Click on YES to update the system. The following mask will be shown:

The file: C:\WIN	VT\system32\	AppExpire.ocx
The prog	gram can't ins	tall it now.
or cance	the installati	ion.

Click on SKIP to continue the update procedure.

If you want to install the PC CLIENT version in a different folder:



1) Click NO to exit;

- 2) Open the CLIENT folder created during the installation C:\ATrIS\Client
- 3) Delete the folder C:\ATrIS\Client

4) Start a new ATrIS installation

Please note that the update is possible only on the PC Client. <u>An update on the PC Server</u> will delete all the data added: for any problems with the PC Server configuration please contact the AdriaMed Project.

2.3 Activate the application

When two or more versions of MS ACCESS are installed on a PC users can configure the ATrIS application in order to always launch it with the same MS Access version. The procedure is the following:

1) Click on the START BAR and select ATrIS

Shut Down	👼 Netscape 7.0	•
	🗖 ATrIS	🕨 🔚 Client 🕨 🕍 ATrIS Client 🔪
🏽 🎆 Start 🛛 🗹 🖳 🥔 🐨 🔂 🖷	🖥 👼 Real	•

- 2) Select ATrIS CLIENT
- 3) Click with the right button of the mouse ATrIS CLIENT
- 4) Select Properties. In the Section SHORTCUT the field TARGET will show the PC CLIENT path (by default C:\\ATrIS\Client\ATrIS_C.mde)

s 🗞	hortcut to ATrIS_C.mdb
Target type:	Application
Target location	: Office
Target:	C:\ATrIS\Client\ATrIS_C.mde
Start in:	C:\AT(S)Client
Start in:	C:\ATrIS\Client
Start in: Shortcut key: Run:	C:\ATrIS\Client None Normal window
Start in: Shortcut key: Run: Comment:	C:\ATrIS\Client None Normal window

5) Add to the PC CLIENT path C:\\ATrIS\Client\ATrIS_C.mde the path of the MS ACCESS version to be used. e.g. "C:\Program Files\Microsoft Office\Office\MSACCESS.EXE" C:\ATrIS\Client \ATrIS_C.mde

Please note that quotes "" should be used to write the path in the correct way

6) Click on Apply than click on OK

2.4 Set Up PC Client application

The first time you launch ATrIS the Set up of the Reference Files should be carried out.

- 1) Launch ATrIS
- 2) The following mask will be shown for few seconds

	i IIaw	/l Infor (ATrIS)	mation Syst	tem
(ADRIAMED	
_		ATrIS	AdriaMed Trawl Information System	
Line and	MiPAF alian Ministry f Agriculture Foresty Policies		VER. 1.0	

3) After few seconds a new mask will be displayed

B USER LOG		×
USER:		
PASSWORD	i:	
OK	Cancel	Set Up References

4) Click on the magic wand button. A Setup Reference Files mask will be shown.

DATA BANK (SERVER):	C:\ATrIS\Server\ATrIS_S.mdb	Browse
APPLICATION (CLIENT):	C:\ATrIS\Client\ATrIS_C.mde	Browse
GIS PROJECT:	C:\ATrIS\Client\GIS\ATrIS_GIS.APR	Browse
ARCVIEW SOFTWARE:	C:\ESRIVAV_GIS30VARCVIEW/BIN32VARCVIEW.EXE	Browse
	BACKUP	Close

Please note that the system will automatically compile all the fields except for the last one (see point 4)

- 1) DATA BANK (SERVER): the system has already compiled this field correctly if a default configuration has been chosen. If you changed the Set up installation path please insert the new correct path by clicking on the BROWSE button.
- 2) APPLICATION (CLIENT): the system has already compiled this field correctly if a default configuration has been chosen. If you changed the Set up installation path please insert the new correct path by clicking on the BROWSE button.
- 3) GIS PROJECT: This part represents the graphic tool of ATrIS. During the installation a directory GIS will be created under C:\ATrIS\. If you changed the Set UP installation path please insert the new correct path by clicking on the BROWSE button.
- 4) ARCVIEW SOFTWARE: ATrIS contains some graphic features which can only be opened with ArcView software. The system will leave this field blank: if your PC has a registered version of ArcView please indicate the path of the executable file (ArcView.exe).

Please note that to configure the system points 1 and 2 are needed and must be compiled. Points 3 and 4 are not needed for the correct functioning of the system. If you leave blank the GIS PROJECT and ARCVIEW SOFTWARE fields the system will work but the graphic tools will be not available.

- 5) Click on UPDATE to activate the new references
- 6) The following mask will be shown.



Click on OK. Please note that if this mask will be not displayed an error has occurred. Check the path and try again.



7) Click on BACKUP to make a backup of the Server ATrIS containing all the data stored.

AdriaMe	d Trawl Information System
٩	A FILE NAMED 'C:\ATrIS\Server\backup\ATRIS_S_20050516_165403.mdb' WAS SAVED AS A BACKUP COPY OF THE DATABANK!
	ОК

8) Click on CLOSE to go back to the USER LOG mask, insert the User name and password.

USER: PASSWORD: Settle	B USER LOG	>
PASSWORD.	USER:	
OF Canada Society	PASSWORL	 Set Up

A mask will be shown.



You should register the application. Please note that you have just one month to use the application.

If you click NO you will skip the registration

If you click YES the following mask will appear:

Iser Name:	USER	Register
erial Number:	889-BRB	Cancel
ast Version:	2.0	
egistration Code:		

Click on Cancel to work with ATrIS.

To register the application kindly take note of the serial number, leave all the rest as in the picture, and communicate it to AdriaMed (by email or by telephone). You will receive a Registration Code: Insert the registration code in the relative field and click on REGISTER.

2.5 Update the data archive (Stand alone installation)

If the installation carried out was a stand alone installation to update the archive two cases are to be considered.

Case 1) Just one PC is qualified to update the archive

Every time you update the archive (e.g. each time you open ATrIS and add/delete/modify data) you must update the ATrIS archive on the other PC on which you decided to install ATrIS. Use the EXPORT/procedure to extract the new inserted data (.txt or .xls). Afterwards import the data using the IMPORT/procedure on each other PC to update the other archive (see chapter 5 for import/export procedures).



EXPORT

IMPORT

Case 2) two or more PC are qualified to update the archive

Each PC must use the EXPORT/procedure to produce the file (.txt or .xls) containing the updated archive and use the IMPORT/procedure to insert the updated archive produced by the others PCs (see chapter 5 for import/export procedures).



2.6 How to change the screen resolution

This software is developed for a screen resolution 1024×768 . If your PC has a lower resolution please change it to display ATrIS correctly.

To change or check the screen resolution the procedure is the following:

1) Right click on desktop and choose "Properties" from the MENU.

2) From the mask "Display Properties" choose the label Settings. Modify the section "Screen area" to the resolution to 1024×768 only if the settings of your PC are lower.

isplay Properties	?
Background Screen Saver Appear	ance Web Effects Settings
Drag the monitor icons to match the p	hysical arrangement of your monitors.
1	2
Display: 1. Plug and Play Monitor on RADEO	N RV250
Colors True Color (32 bit)	Screen area Less More 1024 by 768 pixels
Use this device as the primary mo Extend my Windows desktop onto Identify	nitor.) this monitor. Troubleshoot
	Cancel Apply

3) Now click on the button OK to confirm the choice:

The settings you have chosen n improperly if you do not restart	nay cause some pro your computer now	grams to operate ,
Would you like to:		
C Restart the computer	r with the new displ	ay settings?
Apply the new display	y settings without re	estarting?
	ОК	Cancel
4) Click on OK to confirm again the choice.

Display P	roperties 🔀
•	Windows will now apply your new desktop settings. This will take a few seconds, during which time your screen may flicker.
	If your new settings are not applied correctly, your original desktop settings will be automatically restored in 15 seconds.
	OK Cancel
	Monitor Settings
	Your desktop has been reconfigured. Do you want to keep these settings?
	Reverting in 5 seconds Yes No

3. The Application

3.1 Data encoding

The data are stored into three main tables: HAUL, CATCH and BIOLOGICAL DATA. Users are not allowed to see or manage these tables but in the procedure of import data or data entry the knowledge of the fields required by the system is essential to understand the application performance properly.

Each table contains information on one survey. The table HAUL includes technical data on hauls carried out during that survey (such as geographical coordinates, duration and parameters required to estimate the area swept by the gear). In Table 3.1 details on specifications of the field used in the table HAUL are reported.

Information on the catches recorded (in number and in weight) during the cruises is reported for each species in the table CATCH (Table 3.2). Finally records with frequencies grouped in length classes, for each species, or individual length and sex data are reported in the spreadsheet BIOLOGICAL DATA (Table 3.3).

3.1.1 Haul data

Field	Note		
Country Code	The name of the country participating.		
Haul Code	This number is a key field for accessing record in the database. Therefore each		
	fishing station must have its unique station number. The haul code has a digit code		
	indicating the number assigned to trawl station (e.g. 1,2,3n)		
Vessel Code	The name of the vessel.		
Gear Code	The name of the gear used during the survey		
Validity	This field specifies if the haul is valid or not		
Date	This field contains the date in European standard format in day/month/year		
	sequence		
Time (00:00)B	Time at the beginning of the trawl haul		
Latitude B	The Latitude at the beginning of the trawl haul, as degrees, minutes, and seconds in		
	time format (indicate N or S, i.e. N41 13.41)		
Longitude B The Longitude at the beginning of the trawl haul, as degrees, minutes, and sec			
	in time format (indicate E or W, i.e. E19 22.59)		
Depth (m)B	The bottom depth in metres at the beginning of the haul operation		
Time (00:00)E	Time at the end of the trawl haul		
Latitude E	The Latitude at the end of the trawl haul, as degrees, minutes, and seconds in time		
	format (indicate N or S, i.e. N41 13.41)		
Longitude E	The Longitude at the beginning of the trawl haul, as degrees, minutes, and seconds		
	in time format (indicate E or W, i.e. E19 22.59)		
Depth (m)E	The bottom depth in metres at the end of the haul operation		
Stratum Code	The code assigned to each stratum (i.e. for MEDITS survey the code is a five digit		

Table 3.1. Fields in the structure record of the HAUL Data Table.

	code assigned to each stratum "21101"). This field should be a text field.				
Haul length	This field indicates the length of haul in metres				
Horizontal spread	The horizontal spread of the net mouth (meters)				
Vertical spread	The vertical spread of the net mouth (meters)				
Sweep length	The length of the trawl sweep in centimetres				
Warp length	The length of the trawl warp in centimetres				
Route	The direction of the trawl operation in degrees				
Speed (knots)	The mean speed of the vessel during trawling in knots				
Bottom shape	Bottom shape This is a three letter code indicating the bottom characteristics during the trav				
	operation				
Weather conditions	her conditions Some notes on the weather conditions during the trawl operation				
Sea conditions	Some notes on the sea conditions during the trawl operation				
Wind direction	Wind direction The wind direction during trawling				
Wind speed	The wind speed during trawling				
Note	Any comments				

3.1.2 Catch data

Table 3.2. Fields in the structure record of the CATCH Data Table.

Field	Note			
Country Code	The name of the country participating.			
Haul Code	This number is a key field for accessing record in the database. Therefore each			
	fishing station must have its unique station number. The haul code has a digit code			
	indicating the number assigned to trawl station (e.g. 1,2,3n)			
Species code	Species code This is a 7 letter code to identify the species name following the MEDITS rules (i.			
	Merluccius merluccius MERLMER)			
Total weight (Kg)	The weight of the species in kg on the total catch			
Total number	The number of the specimens caught			
Raising factor	The raising factor used			

3.1.3 Biological data

Table 3.3. Fields in the structure record of the BIOLOGICAL Data Table

Field	Note	
Country Code	The name of the country participating.	
Haul Code	This number is a key field for accessing record in the database. Therefore each	
	fishing station must have its unique station number. The haul code has a digit code	
	indicating the number assigned to trawl station (e.g. 1,2,3n)	
Species code	Species code This is a 7 letter code to identify the species name following the MEDITS rules (i	
	Merluccius merluccius MERLMER)	
Total weight (Kg)	The weight of the specimen/s in kg	
Total number	The number of the specimen/s caught	
Length (mm)	The individual/grouped measurement of length in millimetres	

Sex	The sex of specimens caught
Maturity	The class of the maturity scale used
Maturity scale	The maturity scale used

3.2 Control panel

Once the set up is completed the application will be opened in a "CONTROL PANEL" (Figure 3.1). It contains 5 labels which indicate 5 different panels of the application:

- Data input and retrieval
- Data analysis
- Import/export data
- Data Configuration
- Consistency Control

The application will display by default the panel "Data input and retrieval".

B CONTROL PANEL	×
Quit ATrIS Set Up Reference Files About A	ATriS
DATA INPUT AND RETRIEVAL DATA ANALYSIS MPORT/EX	XPORT DATA DATA CONFIGURATION CONSISTENCY CONTROL
SURVEYS: SURVEY NAME START DATE ADRIAMED_2001 03/01/2002 UNITS: COUNTRY NAME START DATE SLOVENIA 03/01/2002	SURVEY FEATURES MAP HAULS SURVEY SUMMARY CAUGHT SPECIES GENERATE REPORTS BIOLOGICAL DATA REPORT COVER SHOULDER
HAULS: 1 (SELECTED 0) NUM DATE TIME VAL APP 1 03/01/2002 00.00 Y Y	SHOW HAULS DELETE HAUL/S NEW HAUL APPROVE/DISAPPROVE HAUL/S

Figure 3.1. Control panel.

E CONTRO	L PANEL					×
Quit ATrIS	Set Up Refere	ence Files	About ATrIS			
DATA INPUT A	AND RETRIEVAL	DATA ANALYSIS	IMPORT/EXPORT DATA	DATA CONFIGURATION	CONSISTENCY CONTROL	

On the top of the CONTROL PANEL three options are always available:

--Quit ATrIS: it can be used to exit the application

--Set Up Reference Files: it visualize the Set Up Reference Files Table set during the SET UP (already illustrated in Chapter 2.4, point 4)

--About ATrIS: some information on the product.

Please note that:

--the button ESC on the keyboard can be used <u>once</u> to cancel the last action and twice to cancel the entire modification.

--if click twice on a field it is possible (if applicable) to change it.

4. Data Configuration

This section contains the general settings required to decode data (if applicable) and in the handling of data validation (see Chapter 5 *Data Input and Retrieval* and Chapter 8 *Consistency control*). The users can customize each code.

The operation of configuration should be run each time new survey data, with characteristics not yet codified, is inserted in the database (see also Chapter 6 for the inclusion of data for a survey already in the database). Table 4.1 presents the settings that may be modified or added, and in the following paragraphs the configuration procedure for each code is illustrated.

ONTROL PANEL	
it ATrIS Set Up Reference Files	
NPUT AND RETRIEVAL DATA ANALYSIS I IMP	ORT/EXPORT DATA DATA CONFIGURATION CONSISTENCY CONTROL
TABLES OF CODES:	
UNIT CODES	PASSWORD MANAGEMENT
UNIT> SURVEY TYPE	
VESSEL CODES	
GEAR CODES	
SPECIES CATEGORY LODES	PRINT INFO ABOUT RECORDS OPDAT
SPECIES LENGTH RANGE	ENABLE SPECIES LENGTH VALIDATION RUL
MATURITY SCALE CODES	
MAT. SCALES> SPECIES	SURVEY
MAT. SLALES CONVERSION SEA CONDITION CODES	

Table 4.1. List of the codes to be set.

Survey Type Codes	Species length range
Survey Codes	Target species-Survey
Unit Codes	Maturity scale Codes
Unit-Survey Type	Maturity Scale-Species
Stratum Codes	Maturity Scale Conversion
Vessel Codes	Sea Condition Codes
Gear Codes	Weather conditions Codes
Specie Category Codes	Bottom Shape Codes
Species Codes	

4.1 Survey Type Codes

A mask with three fields appears. Add the name or the acronym of the survey and a brief description of it. An ID number is automatically assigned to each survey added. For example the AdriaMed trawl surveys is given the name AdriaMed and a definition which repeats the name of the survey.

ONTROL PANEL		
uit ATrIS Set Up Reference	iles	
A INPUT AND RETRIEVAL DA	A ANALYSIS IMPORT/EXPORT DATA DATA CONFIGURATION CONSISTENCY CONTROL	
TABLES OF CODES:		
SURVEY TYPE CODES SURVEY CODES	PASSWORD	
UNIT CODES	MANAGEMENT	
UNIT> SURVEY TYPE		
VESSEL CODES		
GEAR CODES		
SPECIES CATEGORY CODES	PRINT INFO ABOUT RECORDS UPDA1	
SPECIES CODES	and the second s	
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* patoritamberg		

4.2 Survey Codes

This mask links the name of each survey to the type of survey. Add in the field survey name the complete name of the survey (e.g. AdriaMed 2001, AdriaMed 2002, etc.) and correlate a survey type to each survey name (i.e. AdriaMed 2001 is associated to the AdriaMed type of survey). Numerical ID will be automatically assigned to each survey name.

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2 ADRIAMED_2002	ADRIAMED	-			2
3 ADRIAMED_2003	ADRIAMED	-			-
4 ADRIAMED_2004	ADRIAMED	-	04/12/2004 14.49.46	ADMIN	
5 MEDITS_2004	MEDITS	-	19/01/2005 11.55.34	ADMIN	
6 medits_2005	MEDITS	-	24/02/2005 17.01.14	ADMIN	ç
* itoNumber)		-			

4.3 Unit Codes

During a survey many institutions/countries (hereunder called "Unit") may participate in the investigation. This mask allows the users to associate each Unit which took part to the survey to the survey type field. Insert the name or acronym of each unit, add a code (in the Unit code field) to identify each Unit, select a survey type (if available) with the scroll bar to be associated to the unit.

If the scroll bar does not have the survey type to be associated with the unit code please check if the survey type codes you are looking for has been added in the survey type code field!

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ID	UNIT	UNIT CODE	MODIFIED	MOD. BY	^	
•	1 ALBANIA	ALB	03/02/2005 13:14:56	ADMIN		
2. 2	2 CRUATIA	HRV				
	41TA-M4	114	09/05/2005 8.06.02	ADMIN		
	5ITA-M5	ITA	09/05/2005 8.06.05	ADMIN		
	3 SLOVENIA	SLO				
* utoNu	mber)					

4.4 Unit-Survey Type

This mask combines the units with the survey type. Select in the COUNTRY CODE field the country (UNIT) to associate with a survey (select the survey in the scroll bar).

uit ATrIS Se	et Up Reference Files			
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4.5 Stratum Codes

This mask allows the definition of the strata in a survey. The following fields should be completed. The stratum field is thus linked to the Unit field code.

The AdriaMed trawl surveys strata were defined according to the following bathymetric limits: 10-50m, 50-100m, 100-200 m (GSA 17) and 200-500m and 500-800 m (GSA 18).

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▶ 010-050IT4	STRATOI		1	10	50	2582	ITA-M4	
050-100IT4	STRATO II			50	100	3104	ITA-M4	
100-200IT4	STRATO III		3	100	200	5778	ITA-M4	-
200-500IT4	STRATO IV			200	500	1771	ITA-M4	
21101	10m - 50m North Adriatic Sea			10	50	17300	ITA-M5	
21102	50m - 100m North Adriatic Sea			50	100	8200	ITA-M5	

Table 4.2. List of fields in the Stratum Code mask.

Field	Description
ID	Add a numerical ID to the stratum (i.e. if using MEDITS protocol the stratum
	between 10 and 50 m in the North Adriatic has the ID 21101)
Description	Add a description of the stratum
Minimum depth	The minimum depth in meters registered for that stratum
Maximum depth	The maximum depth in meters registered for that stratum
Surface	The total surface (Km ²) covered by the stratum
Unit	Choose in the scroll bar the Unit associated to that stratum
Area	Add (if available) the zone in which the stratum is located

4.6 Vessel Codes

This mask provides the vessel name and a three letter vessel code.

CONTROL PANEL						×
Quit ATrIS Set Up F	eference Files					
DATA INPUT AND RETRIE	/AL DATA ANALYSIS	IMPORT/EXPORT DATA	DATA CONFIGURATION	SISTENCY CONTROL		
TABLES OF CODES	:					
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MATURITY SCALE CO MAT. SCALES> SPE MAT. SCALES CONVE SEA CONDITION COD	DES CIES RSION ES	_	SURVEY	•	4. 	
ID	VESSEL NAME	VESSEL COD	E MODIFIED	MOD. BY		
▶ 1 ANDR	EA	AND				
2 PACR		PEC	19/01/2005 12.11.00	ADMIN		
* AutoNumber)						

4.7 Gear Codes

This mask records some technical details of the gear used in the trawl survey as follows. The horizontal and vertical spread are necessary to estimate the haul length (see Chapter 6, para 6.3.4.3 for the calculation of haul length).

CONTROL PANEL					
luit ATrIS Set Up Reference Files					
TA INPUT AND RETRIEVAL DATA ANAL	YSIS IMPORT/EXPORT DATA	DATA CONFIGURATIO	CONSISTEN	CY CONTROL	
TABLES OF CODES:					
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GEAR CODES SPECIES CATEGORY CODES SPECIES CODES		PRINT INFO ABO	UT RECORDS		P.)
SPECIES LENGTH RANGE TARGET SPECIES -> SURVEY	u	ENABLE SPECIES	ELENGTH VA	LIDATION RUL	_
MAT. SCALES -> SPECIES MAT. SCALES CONVERSION SEA CONDITION CODES	- 1 [SURVEY	7	₽ <u>₽</u>	¢_
ID GEAB CODE	GEAB NAME	SW CODE		H SPREAD	
2 60073	RETE MEDITS	GC73	WHS8	17.45613*(1-2.71828	5.35*([F
1 TABTA	TARTANA			13.13+(0.00474*[F01	0.731-(0

Table 4.3. List of fields in the Gear Code mask.

Field	Description
ID Code	The system assigns automatically a numerical ID
Gear Code	Add a code to the gear (five letter or numeric code)
Gear name	Add the name of the gear
SW code	Add a four letter code for the sweep type
Door Code	Add a four letter code for the door type
Horizontal Spread	The horizontal spread of the net mouth (meters)
Vertical Spread	The vertical spread of the net mouth (meters)
Survey Type	Choose in the scroll bar the survey type to be associated with the gear

4.8 Species Category Codes

This mask contains the table with the description of each taxonomic code, as reported in the MEDITS protocol. The MEDITS codes for each taxonomic group are the following:

- A= Fish
- B = Crustacea (Decapoda and Stomatopoda)
- C = Cephalopods
- D = Other commercial species
- E = Other animal, non commercial species

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uit ATrIS Se	t Up Refer	ence Files	
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TABLES OF C	DDES:		
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MAT. SCALES	> SPECIES		SURVEY
MAT. SCALES C			
SEA CONDITION	CODES	<u> </u>	
ID	CODE	DESCRIPTION	MODIFIED MOD. BY
• 1	A	Fishes	10/02/2005 15.10.23 ADMIN
2	В	Croustaceous Decapoda and Stomatopoda	
3	С	Cephalopods	
4	D	Other commercial species	
5	E	Other species not of commercial interest	

4.9 Species Codes

Users may customize a table of codes through this mask, using the MEDITS codes for the species name (Bertrand, 1995). The table of codes may be edited as required and new species can be added. A list of 648 scientific names is already registered in the database. Note that the scientific names in the table of codes are not validated by AdriaMed. It is the user's responsibility to ensure that these names are correct. The coefficient a and b of the length-weight relationship equation, although not a required input, are necessary to extrapolate length/weight if only weight/length data are available.

TABLES OF CODES SURVEY TYPE CODES SURVEY CODES UNIT → SURVEY TYPE STRATUM CODES VESSEL CODES GEAR CODES SPECIES CODES SUBVEY ID S. CODE SECIENTIFIC NAME CAT I ABRAVER Abraia veranyi C I ABRAVER ADATIPAL Acantephyra eximia B m I ACANPEL ACANPEL Acantholohus paloni A ACANPEL ACATPAL Acantholphyra pelagica B B m M VER OST SACATPEL Acanthylo	ONT uit AT I A INP	IS S	NEL Set Up Refere BETRIEVAL 1	nce Files Data analysis I import/export data DA	ATA CONFIGU	RA	TION) co	NSISTE	NEY CONT	вогј		
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ID S. CODE SCIENTIFIC NAME CAT. a b L.CODE T. CATI T. C/ I ABRAVER Abraia veranyi C • 0 CEF DCC I ABRAVER Abraia veranyi C • 0 CEF DCC I ABRAVER Abra aba E • 0 CEF DCC I ABRAVER Abra aba E • 0 CEF DCC I ABRAVER Acanthephyra eximia B m VER OST I 4 ACANPEL Acanthephyra pelagica B m VER OST I 5 ACATPAL Acantholoxis palloni A 0 VER OST I 6 AEQUOPE Aequipecten opercularis D I BIV BIV	VESS GEAI SPEC SPEC TARI MATI	SEL CODES CIES CATE CIES COD CIES LENO GET SPEC URITY SC	S GORY CODE S TH RANGE JES> SURV ALE CODES	s v EY	PRINT INFO) A PEC	BOUT RI	ECORD GTH V/	S UPDA1 ALIDATIO	N RUL	2	
ID S. CODE SCIENTIFIC NAME CAT. a b LCODE T. CATI T. CATI I ABRAVER Abraia veranyi C Image: Cation of the state of t	MAT. SEA	SCALES CONDITIO	CONVERSION	·	50	HV	ΕΥ	7	[]	Ē	÷	
1 ABRAVER Abra la veranyi C • 0 CEF DEC 2 ABRALB Abra alba E 0 3 ACANEXI Acantephyra eximia B m VER 0ST 4 ACANEXI Acanthephyra pelagica B m VER 0ST 5 ACATPAL Acantholabrus palloni A 0 VER 0ST 6 AEQUOPE Aequipecten opercularis D 0 BIV BIV		ID	S. CODE	SCIENTIFIC NAME	CA	Γ.	a	b	L.CODE	T. CAT1	T. C/ 🔺	l.
2 ABRRALB Abra alba E 0 3 ACANEX Acantephyra eximia B m VER 0ST 4 ACANFEL Acanthephyra pelagica B m VER 0ST 5 ACATPAL Acantholabrus palloni A 0 VER 0ST 6 AEQUOPE Aequipecten opercularis D 0 BIV BIV		1	ABRAVER	Abralia veranyi	C	*			0	CEF	DEC	
3 ACANEXI Acantephya eximia B m VER 0ST 4 ACANEL Acanthephya eximia B m VER 0ST 5 ACATPAL Acantholphya eximia A M VER 0ST 6 AEQUOPE Aequipecten opercularis D M 0 BIV BIV		2	ABRRALB	Abra alba	E	-			0			
4 ACANFEL Acanthephyra pelagica B m VER OST 5 ACATPAL Acantholabrus palloni A O VER OST 6 AEQUOPE Aequipecten opercularis D O BIV BIV		3	ACANEXI	Acantephyra eximia	В	-			m	VER	OST	
5 ACATPAL Acantholabrus palloni A • 0 VER 0ST 6 AEQUOPE Aequipecten opercularis D • 0 BIV BIV		4	ACANPEL	Acanthephyra pelagica	В	-	Ŭ		m j	VER	OST	
6 AEQUOPE Aequipecten opercularis D		5	ACATPAL	Acantholabrus palloni	A	*			0	VER	OST	
		6	AEQUOPE	Aequipecten opercularis	D	-			0	BIV	BIV	

Table 4.4. List of fields in the scientific name Code mask.

Field	Description					
ID	The system assigns automatically a numerical ID					
Species Code	The seven letter code MEDITS for the species					
Scientific name	The scientific name of each species					
Category	The code MEDITS for each taxonomic group (i.e.					
	A= Fish					
	B = Crustacea (Decapoda and Stomatopoda)					
	C = Cephalopods					
	D = Other commercial species					
	E = Other animal non commercial species)					
a	The coefficient a in the Length-weight relationship equation $(W = aL^b)$					
b	The coefficient b in the Length-weight relationship equation $(W = aL^b)$					
Length Code	The MEDITS code for length interval					
Taxonomy category 1	The taxonomic category at phylum level (Vertebrata, Mollusca, etc.)					
Taxonomy category 2	The taxonomic category at subphylum or class level (Osteichthyes					
	Gastropoda, etc)					

4.10 Species Length Range

ATrIS contains some features to control consistency of data: when an anomalous value is recorded the system is able to reveal it and gives an error message. One of the configuration on which the error control is based is the range of length for a species: determining the minimum and maximum length of a certain species (e.g. *Merluccius merluccius*, LEN. MIN. 1 mm, LEN.MAX 1500 mm) the system is able to detect a strange value (e.g. a length 2000 mm for *Merluccius merluccius*)

B CON	ITROL PANE	L						×
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TA	BLES OF COD	DES:						
SU SU UN ST VE	IRVEY TYPE CO IRVEY CODES IIT CODES IIT> SURVEY RATUM CODES SSEL CODES	IDES TYPE		<u> </u>	PAS MAN	SWORD	1	
GE SP SP	AR CODES ECIES CATEGO ECIES CODES	IRY CODES				O ABOUT RECORDS		P.)
SE TA	RGET SPECIES	HANGE			ENABLE S	PECIES LENGTH VA	LIDATION RUL	
MA	AT. SCALES> S AT. SCALES CON	SPECIES NVERSION			SL	IRVEY	C.	ф
SE	A CONDITION C	LUDES		•				
	SPEC	IES	MIN. L.(mm)	MAX. L.(mm)	MODIFIED	MOD. BY		_
•	ARISFOL	-	10	360				
-	ARITANT		10	66		5		
1	ASPICUC	-	30	500				
		•	45	335				
-	ELEDUR	•	10	355				
		•	10	300	05/05/2005 12/29 19	ADMIN	<u>.</u>	
	Loindon	*	4	400	03/03/2003 12:33:13	ADMIN		

4.11 Target species-Survey

In each survey a list of target species list is available. This mask allows users to add a target species using the scroll bar SPECIES: the list of all the species inserted in the database will be available. Pick up the species, which is to be considered target, in the SPECIES scroll bar and in the scroll bar SURVEY select the survey in which the species is target. This operation should be repeated for each target species.

CONTROL P	ANEL						×
Quit ATrIS	Set Up Reference	e Files					
ATA INPUT AND	RETRIEVAL DA	TA ANALYSIS IMPORT/EXF	PORT DA	TA DATA CONFIGURAT	ION CONSISTENCY	CONTROL	
TABLES OF SURVEY TYF SURVEY COI UNIT CODES UNIT> SUP STRATUM CI VESSEL COD GEAR CODE' SPECIES CA	CODES: PE CODES DES VEY TYPE DDES ES S TEGORY CODES		A	PASSW MANAGE	ORD MENT BOUT RECORDS UF	PDA1	
SPECIES COL SPECIES LEN	DES IGTH RANGE INES -> SUBVEY			ENABLE SPEC	IES LENGTH VALID	ATION RUL	
MATURITY S MAT. SCALE MAT. SCALE SEA CONDIT	CALE CODES 5> SPECIES 5 CONVERSION ION CODES		-	SURVE	Y 🔹	₽ <u></u> ∎	
	SPECIES	SURVEY		MODIFIED	MOD, BY		<u> </u>
ABRAVE	3 -	ADRIAMED_2001	+			Ĩ	
MULLBAR	۹ 🗖	ADRIAMED_2001	+				
MUNICUR	۹ 🗕	ADRIAMED_2001	-				_
ABRAVER	3 -	ADRIAMED_2002	-	18/11/2004 17.10.27	ADMIN		
MERLME	R 두	ADRIAMED_2002	*	18/11/2004 17.10.27	ADMIN		
MULLBAR	२ -	ADRIAMED_2002	-	18/11/2004 17.10.27	ADMIN		
MUNICU	۹ 🖡	ADRIAMED 2002	-	17/11/2004 23.38.02	ADMIN		

Another way to add target species for a new survey is the following. In the scroll bar SURVEY select a survey with the same (or very similar) target species list of the survey to be added. A button COPY will be activated.



Click on the button COPY: the data will be automatically copied and the button PASTE will be activated. Select the new survey from the scroll bar and press the button PASTE.

Automatically the list of the target species of the old survey will be pasted and associated to the new survey.

TARGET SPECIES -> SURVEY MATURITY SCALE CODES MAT. SCALES -> SPECIES MAT. SCALES CONVERSION SEA CONDITION CODES		•	SURVEY	
SPECIES	SURVEY ADRIAMED_2002	_	ADRIAMED_2001 ADRIAMED_2002 ADRIAMED_2003 ADRIAMED_2003	
MERLMER - MULLBAR -	ADRIAMED_2002 ADRIAMED_2002	*	MEDITS_2004 medits_2005	

4.12 Maturity scale Codes

Users may define the maturity scale by completing this table (Table 4.5). In the field maturity scale code a five letter code should be added to identify the maturity scale used. Please note that when the same taxa have different maturity scale for each sex a maturity scale code should be added (i.e. for the family of Penaeideae the maturity scale MEDITS is available just for the females).

CONTROL PANEL					×
Quit ATrIS Set Up Re	ference Files				
DATA INPUT AND RETRIEV	AL DATA ANALYSIS IMPORT/EXPI	ORT DATA DATA CONFIGURAT	TION CONSISTENCY C	ONTROL	
TABLES OF CODES:					
SURVEY TYPE CODES SURVEY CODES UNIT CODES UNIT> SURVEY TYPE STRATUM CODES VESSEL CODES SPECIES CATEGORY C SPECIES CATEGORY C SPECIES CODES SPECIES CODES	DDES	PASSW MANAGE	ORD MENT BOUT RECORDS UP		ED.
TARGET SPECIES -> S MATURITY SCALE COD MAT. SCALES -> SPECI MAT. SCALES CONVER SEA CONDITION CODE	GE JRVEY ES ES SION 5	SURVI	ES LENGTH VALIDA		9
ID	DESCRIPTION	MAT.SCALE CI	DDE N.CLASSES S	EX	
3 MEDITS C	ephalopods	MEDCE	3	-	
1 MEDITS fi	shes	MEDFI	2	· 21/0	04/2005 21.1
2 MEDITS N	ephrops female	MEDNF	3 F	-	
14 MEDITS fe	male of Penaeidae	MEDPF	2 F	•	
4 MEDITS S	elaci	MEDSE	3	*	

Table 4.5. List of fields in the Maturity scale code mask.

Field	Description
ID	The system automatically assigns numerical ID
Description	Add a brief description of the maturity scale
Maturity scale Code	Add a five digit code to identify the maturity scale
Number of classes	Indicate the number of classes allowed by the maturity scale chosen
Sex	Indicate the sex for which the maturity scale is available

Please note that if the Maturity scale Code inserted is not a five digit code the system will display the following error message.

AdriaMo	ed Trawl Information System	×
	ATTENTION! THE CODE MUST BE A 5 LETTERS CODE!	
	OK Help	

4.13 Maturity Scale-Species

This mask is strictly associated to the previous and allows to link each maturity scale to a species for and a survey. For each species for which a maturity scale is available, a survey should be associated.

οN	TROL PANEL							
iit A'	TrIS Set Up Reference I	Files						
A IN	PLIT AND BETRIEVAL L DAT	A ANALYSIS I IMPORT/EXPORT DA	TA	DATA CONFIGURATION CONSI	STEN	CY CONT	BOLL	
TAI SUI UN STI VES GEI SPI SPI SPI TAI MA	ALES OF CODES: AVEY TYPE CODES AVEY ODES IT ⇒ SUPVEY TYPE AT UM CODES SEL CODES SEL CODES CUES CATEGORY CODES CUES CATEGORY CODES CUES CATEGORY CODES CUES LENGTH RANGE GET SPECIES → SUPVEY TURNY SCALE CODES	Ă	ন ন	PASSWORD MANAGEMENT PRINT INFO ABOUT RECE ENABLE SPECIES LENGTI	IRDS I VAL	UPDA1	IN RUL	1
MA SE/	T. SCALES CONVERSION A CONDITION CODES	V		SURVEY	·			°=
	SPECIES	MAT. SCALE		SURVEY	N	. CLASS.	SEX	MOD 🔺
•	MERLMER	 MEDITS fishes 		 ADRIAMED_2001 	*	2		
	MULLBAR	 MEDITS fishes 		 ADRIAMED_2001 	-	2		
1	NEPRNOR	 MEDITS Nephrops female 		 ADRIAMED_2001 	-	3	F	
1	MERLMER	 MEDITS fishes 		ADRIAMED_2002	-	2		28/11/200
	MULLBAR	 MEDITS fishes 		 ADRIAMED_2002 	*	2		28/11/200
	NEPRNOR	 MEDITS Nephrops female 		ADRIAMED_2002	-	3	F	28/11/200
86 - 3	ARISFOL	 MEDITS female of Penaeidae 		 MEDITS_2004 	-	2	F	20/01/200

Another way to link a species to a maturity scale is the following (see also para 4.10). In the scroll bar SURVEY select a survey with the same (or very similar) species list/maturity scale of the survey to be added. A button COPY will be activated.



Click on the button COPY: the data will be automatically copied and the button PASTE will be activated. Select the new survey from the scroll bar and press the button PASTE. Automatically the list of the species/maturity scale of the old survey will be pasted and associated to the new survey.

									/
	TARGET SPECIES> SUR\ MATURITY SCALE CODES	VEY							
l i	MAT. SCALES> SPECIES			SURVEY					
	MAT. SCALES CONVERSIO	IN			-		ħ	•	
Ľ	JEA CONDITION CODES		¥	ADDIAMED 2001	-				
_									
	SPECIES		MAT. SCALE	ADRIAMED_2002	Ν.	CLASS.	SEX	MOD 🔺	
	MERLMER	+	MEDITS fishes	ADRIAMED_2004	r I	2			
	MULLBAR	4	MEDITS fishes	MEDITS_2004	r	2			
	NEPRNOR	+	MEDITS Nephrops female		-1	3	F		
	MERLMER	+	MEDITS fishes	 ADRIAMED_2002 	*	2		28/11/200	

4.14 Maturity Scale Conversion

This is the last mask related to the maturity scale. It allows users to convert the update or modify a maturity scale used for another scale. For example if the maturity scale applied to fish allowed three stages and a new fourth stage has been discovered, all the fish with stage 3 should be converted into 4 stage maturity. It is necessary to indicate in the table the maturity

scale to be converted, indicate one by one the maturity stage of the scale and indicate the new converted stage to be assigned.

CONTROL PANEL						×
Quit ATrIS Set Up Reference Files						
DATA INPUT AND RETRIEVAL DATA ANALYSIS	IMPORT/E	KPORT DATA	DATA CONFIGURATION	CONSISTENCY CONTRO)L	
TABLES OF CODES:						
SURVEY TYPE CODES SURVEY CODES UNIT CODES UNIT -> SURVEY TYPE STRATUM CODES VESSEL CODES GEAR CODES SPECIES CATEGORY CODES SPECIES CODES SPECIES CODES		×	PASSWORD MANAGEMENT PRINT INFO ABOUT	RECORDS UPDA1	зÞ	
TARGET SPECIES -> SURVEY MATURITY SCALE CODES MAT.SCALES -> SPECIES MAT.SCALES-CONNESSION SEA CONDITION CODES			SURVEY			
MATURITY SCALE	GR/	ADE CONV.	MODIFIED	MOD. BY	•	
MEDITS fishes	-	2	1 25/01/2005 17.19.04	ADMIN		
MEDITS fishes	-	3	1 25/01/2005 17.18.59	ADMIN		
MEDITS fishes	-	4	1 25/01/2005 17.18.53	ADMIN		

4.15 Sea Condition Codes, Weather conditions Codes and Bottom Shape Codes

These masks are related to the climatic and topographic conditions during the survey. Each table has the same structure: an ID automatically given, the description of the code, and the code to be assigned (preferably a four letter code). The users can customize or add new voices to these tables.

CONTROL PANEL	×
Quit ATrIS Set Up Reference Files	
ATA INPUT AND RETRIEVAL DATA ANALYSIS IMPOR	AT/EXPORT DATA DATA CONFIGURATION CONSISTENCY CONTROL
TABLES OF CODES:	
UNIT CODES UNIT -> SURVEY TYPE STRATUM CODES VESSEL CODES GEAR CODES SPECIES CATEGORY CODES SPECIES CODES	PASSWORD
SPECIES LENGTH RANGE	CONTROL PANEL
MATURITY SCALE CODES	Quit ATrilS Set Up Reference Files
MAT. SCALES -> SPECIES MAT. SCALES CONVERSION	DATA INPUT AND RETRIEVAL DATA ANALYSIS IMPORT/EXPORT DATA DATA CONFIGURATION CONSISTENCY CONTROL
SEA CONDITION CODES	
WEATHER CONDITION CODES	TABLES OF CODES:
ID DESCRIPTION	LUNIT CODES UNIT ~> SURVEY TYPE SEA STRATUM CODES VESSEL CODES SPECIES CATEGORY CODES SPECIES CATEGORY CODES SPECIES CATEGORY CODES
DNTROL PANEL	SPECIES LENGTH RANGE TARGET SPECIES - SURVEY MATURITY SCALE CODES MAT. SCALES -> SPECIES M
it ATrIS Set Up Reference Files	BOTTOM SHAFE CODES
A INPUT AND RETRIEVAL DATA ANALYSIS IMPORT/	/EXPORT
TABLES OF CODES:	ID DESCRIPTION BOTT.SH. CODE MODIFIED MOD. BY
UNIT CODES UNIT -> SURVEY TYPE STRATUM CODES VESSEL CODES GEAR CODES SPECIES CATEGORY CODES	
SPECIES CODES SPECIES LENGTH RANGE TARGET SPECIES ->> SURVEY MATURITY SCALE CODES MAT. SCALES ->> SPECIES MAT. SCALES ->> SPECIES MAT. SCALES CONVERSION	PRINT INFO ABOUT RECORDS UPDA1 ENABLE SPECIES LENGTH VALIDATION RUL
AND CONCESSION CONTRACTORS	
SEA CONDITION CODES WEATHER CONDITION CODES BOTTOM SHAPE CODES	SURVEY
SEA CONDITION CODES WEATHER CONDITION CODES BOTTOM SHAPE CODES ID DESCRIPTION	
SEA CONDITION CODES WEATHER CONDITION CODES BOTTOM SHAPE CODES ID DESCRIPTION 1 [CLEAR 2 [CLUIDY	SURVEY
SEA CONDITION CODES WATHER CONDITION CODES BOTTOM SHAPE CODES ID DESCRIPTION 1 CLEAR 2 CLOUDY 3 PARTIAL CLOUDY	SURVEY WEATH. CODE MODIFIED MOD. BY CLEAR CLOUD PARCL

4.16 Data management

On the right side of the panel there are three options to configure/manage data:

--Password management

--Print info about records update

--Enable species length validation rules

4.16.1 Password management (only for Administrators)

Only the administrator is allowed access to the data management is. To create an Administrator account please insert the prefix *admin* to the user field. The administrator may control/change the passwords of users. By clicking on the button PASSWORD MANAGEMENT a window will be opened. Insert the user name, the old password in the first field and the new password in the second field. The button on the bottom of the window will show the list of all the users allowed to access ATrIS.

Users can not manage, then modify the passwords.

The Administration account has some additional capabilities on data configuration and it can approve/disapprove a hauls (see Chapter 6, para 6.3).

🗉 MODIFY PASSWORD 🛛 🔀	B PASSWORD MANAGEMENT	
	USERNA	ME
LISED.	ADMIN	
USEN.	ADMINCHIARA	
	ADMINNICO	
PASSMOPD	ADMINVINCE	
TASSITORD.	ROBERTO	23
	*	
PASSWORD:		
OK. 🛄 🛛 Cancel		

4.16.2 Print info about records update

ATrIS includes useful features to generate reports as illustrated in the following paragraphs. Users can define if a report should contains information on the management of records (the modifications, who made the modification, the date of the modification etc.)

₽	PRINT INFO ABOUT RECORDS UPDATE	-
---	---------------------------------	---

4.16.3 Enable species length validation rules

One of the data consistency controls is based on the species length range: if a range of length, minimum and maximum length, is defined for a species, it is easy to control if a single specimens has a length value outside the fixed range. This control is setup by default but

there could be the necessity to disable this option by click on the check on the DATA CONFIGURATION Panel.

ENABLE SPECIES LENGTH VALIDATION RULES

5. Import/export data

The system permits to import data from other databases or sets of data. The Import/Export panel allows the users for the exchange of data to/from AdriaMed Excel based database and MEDITS. The AdriaMed Databank format is based on Excel files while the MEDITS data are recorded as simple text files.

CONTROL PANEL			2
DATA INPUT AND RETRIEVAL	DATA ANALYSIS IMPORT/EXPORT (DATA DATA CONFIGURATION CONSISTEND	CY CONTROL
SURVEY	DATA TYPE	SPECIES	STOP
ADRIAMED DATABANK	FORMAT C MEDITS FORMAT	EXCEL FILE TEXT FILE	
FILE: IMPORT CHECK FOR ERRORS	IMPORT SI	RT	
			Ç

5.1 Import data

Once the Set up has been carried out (see chapter 4), the records which have been downloaded on to a diskette or in a directory of your PC in a file may be imported on to the ATrIS System.

Please note that the import procedures should be started only if Set-Up has been completed.

Hereunder the procedures of import for the AdriaMed data or MEDITS data are illustrated. ATrIS recognize the AdriaMed databank format (.xls files) and MEDITS formats (.xls files and txt.files). The following six steps must be followed:

1. Choose the Survey

Select using the scroll bar the corresponding survey to the data to be imported (field SURVEY)

2. Choose the type of data you want to import

Indicate in the field DATA TYPE using the scroll bar if the data to be imported are haul, catch or biological data. (see para 5.2 and 5.3)

- 3. Choose the species you want to limit the import procedure (if applicable) Using the scroll bar indicate one species in the field SPECIES to limit the data to import only to that species
- 4. Indicate the file name



5. Select the format type

Click on the check for AdriaMed Databank format or MEDITS format. Both the Import/Export button procedures will be activated.

	HAUL DATA		<u> </u>
FILE: C:\IMPORT.xls	MEDITS FORMAT	CEL FILE O TEXT FILE	
CHECK FOR ERRORS	RT EXPORT SHOW DAT EXPOR	TA TO EXPORT	

6. Select the file type (Excel file or Text file)

7. Follows the indication in para 5.2 if choosing AdriaMed Databank format or para 5.3 if choosing MEDITS format.

- 8. *Click on CHECK for Errors.* The system will start to check the data for errors. A series of messages will be displayed: the type of error and the location (row and/or column) will be indicated. If error/s occurs, please
 - a) read the message,
 - b) reopen the original file,
 - c) check for the error the original file,
 - *d*) remove the error/s,
 - e) save the file and then

f) repeat the import procedure from step 1.

TA INPUT AND RETRIEVA	AL DATA ANALYSIS	ORT/EXPORT DATA DATA COM	FIGURATION CONSISTE	NCY CONTROL
SURVEY ADRIAMED_2001	DATA T HAUL DA	YPE	SPECIES	
		FORMAT © EXC	EL FILE O TEXT FILE	 - cal
	-		L'AL	
IMPORT	IMPORT	EXPORT SHOW DATA TO EXPORT	EXPORT	
IMPORT CHECK FOR ERRORS	IMPORT	EXPORT SHOW DATA TO EXPORT	EXPORT	

The button \Box visualizes the records to be imported.

Once the control checking has been ultimate the system gives a green message and displays the records to be imported.

	SURVEY	UNIT	HAUL	VESSEL	GEAR	V	DATE	TIME(S)	LAT.° +
>	ADRIAMED 2004	ALA	42	PEC	TARTA		07/11/2005	6.25	0.00
Ĩ	ADRIAMED_2004	ALA	43	PEC	TARTA		07/11/2005	9.25	
Ĩ	ADRIAMED_2004	ALA	44	PEC	TARTA		06/11/2005	14.25	
	ADRIAMED_2004	ALA	45	PEC	TARTA		07/11/2005	8.05	
	ADRIAMED_2004	ALA	46	PEC	TARTA		07/11/2005	14.00	
Ĩ	ADRIAMED_2004	ALA	47	PEC	TARTA		07/11/2005	12.40	
Ĩ	ADRIAMED_2004	ALA	48	PEC	TARTA		08/11/2005	16.40	
	ADRIAMED_2004	ALA	49	PEC	TARTA		07/11/2005	16.40	
1	ADRIAMED_2004	ALA	50	PEC	TARTA		07/11/2005	15.35	
	ADRIAMED_2004	ALA	51	PEC	TARTA		08/11/2005	15.20	

9. Import records by clicking on IMPORT button.

All the records will be definitively imported and automatically they will no longer be displayed in the windows below; the button IMPORT will be deactivated. A message box will alert to the successful import.

B CONTROL PANEL	X	
DATA INPUT AND RETRIEVAL DATA ANALYSIS IMPORT/EXPORT DATA DATA CONFIGURATION CONSISTENCE	Y CONTROL	
SURVEY DATA TYPE SPECIES ADRIAMED_2001 • HAUL DATA •		
C ADRIAMED DATABANK FORMAT C MEDITS FORMAT		
FILE: C:\4DRIAMED\TRAWL BASE\ATSDM_Access\IMPORT.xls	AdriaMed Trawl Information System	×
IMPORT EXPORT EXPORT EXPORT	RECORDS ARE SUCCESSFULLY IMPORTED!	

Please note that to import haul data, catch data, and biological data the import procedures should be run three times.

5.2 AdriaMed Databank format (Excel file)

The AdriaMed Trawl Survey Databank has been used to store/analyse the data of the AdriaMed Trawl survey 2001 and 2003 (Milone *et al.*, 2004). The Databank was an Excel based system. Therefore there would be the need to export from that system the data and import them to the ATrIS system. However it is essential that some of the parameters are changed to ensure that the AdriaMed Databank records are converted in a format compatible with the ATrIS application.

<u>Please note that to import the AdriaMed Databank format (Excel files only), the structure of a record should be modified using the following rules:</u>

- 1. Open the AdriaMed Databank Excel file.
- 2. Rename the Excel spreadsheet into:

AdriaMed format	ATrIS format
Haul	HAUL
Catch	САТСН
Length distribution	BIOLOGICAL

Be sure that the columns appear in the same order as reported in para 3.1.1 for the haul data, in para 3.1.2 for the catch data and in para 3.2.3 for the biological data.

Please verify that the blank rows/columns below the records are truly unfilled: if the system reveals a formatting or a cell that is not clear during the import procedures the blank row/column will be counted and the system will display an error message indicating "Invalid Use of Null". In this case delete all the blank rows/column.

The file can now be imported to ATrIS. Follows the procedures already indicated in para 5.1.

5.3 MEDITS format

ATrIS allows the import of the MEDITS data. The procedure for importing MEDITS records are similar to that described in para 5.2 for the AdriaMed Databank format.

ATrIS detect two MEDITS formats: EXCEL format and ASCII format.

5.3.1 EXCEL format

This option may be used when there is a need to import MEDITS data in an EXCEL format. Use the TA TB and TC files. The procedure then is as follows:

1. Open the TA, TB, TC.dbf files using Excel. Save the TA, TB, TC as Excel files (xls extension).

2. Rename the Excel spreadsheet into:

MEDITS format	ATrIS format
ТА	HAUL
ТВ	САТСН
TC	BIOLOGICAL

Please note that the field YEAR for the MEDITS procedure up to 1999 is a two digit number field. ATrIS uses a four digit code for the YEAR field.

3. Select the type of survey (SURVEY) and the type of data (DATA TYPE) to be imported. If the import procedure would be limited to one species please specify the species name using the scroll bar SPECIES.

Please note that to import haul data, catch data and biological data the import procedures should be run three times.

4. Once steps 1 and 2 are completed indicate the source file and specify the format type (click on the check available, i.e. MEDITS format and Excel file). Both the Import/Export button procedures will be activated.

5. Click on CHECK FOR ERRORS and the system will start to check the data for errors.

6. Once all the errors have been removed (see para 5.2, point 5) and the import procedure is completed the system gives a green message. The list of the records to be imported will be shown.

7. Click on the IMPORT button.

5.3.2 ASCII (text) format

The text MEDITS format import procedure is very simple as the ATrIS system recognizes the format as it is released from MEDITS. However some problems may occur, in this case see para 5.4 for the codification of error messages.

🖾 Ta.txt - Notepad		_ <u>_ </u> _ ×
<u>File Edit Search Help</u>		
TAHRVANDGOC73GC73WHS82003	20 1S 71814502.081330.47 34 74814503.661330.52 3130UR	32928 1817 -
TAHRUANDGOC73GC73WHS82003	20 28 90514515.551330.41 3 93514517.181330.03 2430UR	33055 1817
TAHRVANDG0C73GC73WHS82003	20 3\$103114522.321324.22 23110114521.141325.63 2530VR	32856 1817
TAHRVANDG0C73GC73WHS82003	20 4S141014447.851341.67 41144014447.121343.57 4030VR	32843 1817
TAHRVANDG0C73GC73WHS82003	20 5S160314442.821401.28 46163314442.961403.43 4830VR	32848 1817
TAHRUANDGOC73GC73WHS82003	20 6S173614448.251412.55 49180614449.151414.32 4930UR	32867 1817
TAHRUANDGOC73GC73WHS82003	21 7S 42514436.121405.69 46 45514435.291407.48 4430UR	32821 1817
TAHRVANDGOC73GC73WHS82003	21 8S 55114434.381413.90 48 62114432.981414.93 4230VR	32934 1817
TAHRVANDGOC73GC73WHS82003	21 9S 71214428.791415.42 50 74214428.101417.28 5030UR	32769 1817
TAHRVANDGOC73GC73WHS82003	21 10S 84814425.871427.88 51 91814424.471428.84 5230UR	32888 1817
TAHRVANDGOC73GC73WHS82003	21 11S100914418.811430.76 60103914418.161432.69 6130UR	32834 1817
TAHRVANDGOC73GC73WHS82003	21 12S122814434.441440.62 77125814435.881439.72 7630UR	32922 1817
TAHRVANDGOC73GC73WHS82003	21 13S140814445.881434.34 78143814447.381433.79 8230VR	32876 1817
TAHRVANDGOC73GC73WHS82003	21 14S152514453.201432.48 92155514454.761432.10 8430VR	32922 1817
TAHRVANDGOC73GC73WHS82003	21 15S171714506.701424.39 63174714508.151424.95 6230UR	32785 1817
TAHRVANDGOC73GC73WHS82003	22 16S 43814503.811448.67 61 50814502.491449.71 6130UR	32791 1817
TAHRVANDGOC73GC73WHS82003	22 17S 60614455.471452.14 72 63614453.931452.61 7230UR	32908 1817
TAHRVANDGOC73GC73WHS82003	22 18S103214421.251455.51 74110214420.461457.42 7130UR	32921 1817
TAHRVANDGOC73GC73WHS82003	22 19S115214414.691459.71 47121714413.661500.84 4925UR	32429 1817
TAHRVANDGOC73GC73WHS82003	22 20S135514405.801448.71 64142514404.721450.26 6230UR	32876 1817
TAHRVANDGOC73GC73WHS82003	22 21S161914351.881507.94 79164914350.481508.89 8230UR	32888 1817
TAHRVANDGOC73GC73WHS82003	22 22S172814347.401511.01 92175814346.341512.57 9430UR	32869 1817
TAHRVANDGOC73GC73WHS82003	22 23S183414344.831514.26103190414346.151515.27 9830UR	32789 1817
TAHRVANDGOC73GC73WHS82003	23 24S 42214347.421527.36 86 45214346.051528.41 8630UR	32898 1817
TAHRVANDGOC73GC73WHS82003	23 25S 65314333.021545.01161 72314331.961543.4915630UR	32832 1817
TAHRVANDGOC73GC73WHS82003	23 26S 82014333.781535.66205 92014334.081531.2320460UR	35988 1817
TAHRVANDGOC73GC73WHS82003	23 27S101014333.421529.25203111014330.441529.6319960UR	35540 1817
TAHRVANDGOC73GC73WHS82003	23 28\$120814327.151534.12189123814325.651534.7018830UR	32885 1817
TAHRVANDGOC73GC73WHS82003	23 29\$135614315.411532.15168142614313.951532.3015930UR	32710 1817
TAHRVANDGOC73GC73WHS82003	23 30S151514311.021534.20146154514309.621534.8914430UR	32758 1817
TAHRVANDGOC73GC73WHS82003	23 31S162514306.951537.35133165514305.701538.4412630UR	32746 1817 🗸
•		

The import procedure is the same as illustrated in para 5.1 and it is reported below:

1. Select the type of survey (SURVEY) and the type of data (DATA TYPE) to be imported. If the import procedure is limited to one species please specify the species name using the scroll bar SPECIES.

2. Indicate the source file and specify the format type (click on the check available, i.e. MEDITS format and Text file). Both the Import/Export button procedures will be activated.

4. Click on CHECK FOR ERRORS and the system will start to check the data for errors.

5. Import data file.

Please note that to import haul data, catch data and biological data the import procedures should be run three times.

5.4 Codification of errors messages

This paragraph is intended to show the most frequent errors that could appear during the import procedures, it does not cover all the error types.

Error messages are displayed when the information required to import/export data is incomplete. If an error occurs, please read the message, reopen the original file, check for the error, remove the error(s), save the file and then repeat the import procedure from step 1 (as described in Chapter 5, para 5.1).

To facilitate the reading of the chapter the errors have been divided into five categories: -General errors -Syntax errors -No correspondence error -X errors -Red errors

5.4.1 General Errors

A series of general messages could be displayed.

When decoding the haul, a stratum should be allocated. If the message below is shown the code used could be not correct or missing: please control in the SET UP panel and in the original file. For example an incorrect stratum e.g. 21116 (10-50 m) has been associated to a haul carried out in a 62 m depth station, or the column stratum could be empty.

ERRORS IN THE INPUT TABLE:			Ç≡
ERROR	ROW	COLUMN	▲
THERE IS NO STRATUM AVAILABLE FOR THE HAUL, PLEASE CHECH	2	2 Stratum	
THERE IS NO STRATUM AVAILABLE FOR THE HAUL, PLEASE CHECH	(3 Stratum	
THERE IS NO STRATUM AVAILABLE FOR THE HAUL, PLEASE CHECH	(4	1 Stratum	
THERE IS NO STRATUM AVAILABLE FOR THE HAUL, PLEASE CHECH	5	5 Stratum	
THERE IS NO STRATUM AVAILABLE FOR THE HAUL, PLEASE CHECH	6	Stratum	
THERE IS NO STRATUM AVAILABLE FOR THE HAUL, PLEASE CHECH	7	7 Stratum	

If the data inserted in the original file do not follow the rules for the import procedures, a message could appear as shown below. For example the date is written in a different format (dd/mm/yy and not dd/mm/yyyy), or the latitude is given without the indication of the direction (N or E)..etc.

RORS IN THE INPUT TABLE:		Ç≡
EBBOB	BOW COLUMN	
DATA TYPE CONVERSION ERROR.	2 Date	

5.4.2 Syntax Errors

If the error shown in the mask below appears, please control that the settings of your PC are International Settings.

RORS IN THE INPUT TABLE:		Ç≡
ERROR ROW	V COLUMN	
SYNTAX EBBOB (COMMA) IN OLIEBY EXPRESSION (E20, STRATUM, ID-222	2STBATUM ID	

To control or modify the PC settings for the numbers follows the step:

- 1) Click on START of your PC and select Settings
- 2) Chose CONTROL PANEL
- 3) In CONTROL PANEL window select Regional Options



In Regional Options select the mask Number and modify the Decimal Symbol in a dot (.) and Digit grouping symbol in a comma (,).

Appearance samples	Magashira [122.456	799.00
1 USHIVE. 1723.438.1 03,00	Negative. 123.430.	100,00
Decimal symbol:		-
No. of digits after decimal:	2	•
Digit grouping symbol:		•
Digit grouping.	123.456.789	•
Negative sign symbol:	·	•
Negative number format:	-1,1	•
Display leading zeros:	0,7	•
List separator:	2	•
Measurement system:	Metric	•
measurement system.	Jmetic	-

5.4.3 No Correspondence Errors

This type of error occurs each time there is no correspondence in the SET UP configuration and the record included in the file. Some examples follow.

For example if there is no correspondence between the stratum code and the depth an error message will appear (e.g. the mean depth is 160 and the MEDITS stratum associated in the file is 22144 (200-500 m) instead the value to be indicate should be 22143 (100-200 m).

RORS IN THE INPUT TABLE:		(I)
ERBOR	ROW COLUMN	
NO CORRESPONDANCE BETWEEN STRATUM AND DEPTH	12ISTBATUM ID	

There could be no correspondence between the UNIT and the SURVEY TYPE. For example if a unit is recorded in both the AdriaMed survey type or MEDITS survey type attention should be paid to allocate the UNIT correctly: this could be the case of Albania, recorded in both the survey type. In the example below the error occurs in different rows but in the same column, the COUNTRY_CODE column. Probably during the Set Up the UNIT (COUNTRY_CODE column) has not been associated to a SURVEY.

ERRORS IN THE INPUT TABLE:		Ç≡
ERROR	ROW COLUMN	▲
NO CORRESPONDANCE BETWEEN UNIT AND SURVEY TYPE	2 Country_CODE	
NO CORRESPONDANCE BETWEEN UNIT AND SURVEY TYPE	3 Country_CODE	
NO CORRESPONDANCE BETWEEN UNIT AND SURVEY TYPE	4 Country_CODE	
NO CORRESPONDANCE BETWEEN UNIT AND SURVEY TYPE	5 Country_CODE	
NO CORRESPONDANCE BETWEEN UNIT AND SURVEY TYPE	6 Country_CODE	
NO CORRESPONDANCE BETWEEN UNIT AND SURVEY TYPE	7 Country_CODE	

In the example below there is no correspondence between the sex indicated and the maturity scale used (e.g. a female *Nephrops norvegicus* with a maturity stage 4 will be not accepted if the maturity scale for female Penaeidae used is a three stage scale). In this case check if the value inserted is correct or control in the SET UP panel if the maturity scale used is correct.

RORS IN THE INPUT TABLE:		ÇE
ERROR	ROW COLUMN	
NO CORRESPONDANCE BETWEEN SPECIES, SEX, AND MATURITY	17 MATURITY SCALE	
NO CORRESPONDANCE BETWEEN SPECIES; SEX, AND MATURITY	18 MATURITY SCALE	
NO CORRESPONDANCE BETWEEN SPECIES, SEX, AND MATURITY	19 MATURITY SCALE	
NO CORRESPONDANCE BETWEEN SPECIES, SEX, AND MATURITY	20 MATURITY SCALE	
NO CORRESPONDANCE BETWEEN SPECIES, SEX, AND MATURITY	21 MATURITY SCALE	
NO CORRESPONDANCE BETWEEN SPECIES, SEX, AND MATURITY	22 MATURITY SCALE	



If the number of column is lower than that indicated in Chapter 3, the following message will be shown.



If an error occurs in a field, the system will indicate the column in which the error has been detected (in the example the Column GEAR CODE is not in a valid position).



If a column is the a wrong position the error box will appear.



When importing MEDITS format data in a .txt file the message below could appear: the MEDITS Protocol uses a two digit code (99) for the YEAR field however the ATrIS System needs a four digit number code (1999).



If the spreadsheet has a different name from that indicated in the AdriaMed Databank Format the following error will be displayed (In the example the spreadsheet biological had another name).



5.4.5 RED ERRORS

During the import procedure when a first control on the error has been carried out the system informs on the type of records it is going to import.

	LINUT	11010)(ECCEL	OFAD	11	DATE	TIMATICA	I AT O/C
5	URVEY	URVEY UNIT	URVEY UNIT HAUL	URVEY UNIT HAUL VESSEL	URVEY UNIT HAUL VESSEL GEAR	SURVEY UNIT HAUL VESSEL GEAR V	SURVEY UNIT HAUL VESSEL GEAR V DATE	URVEY UNIT HAUL VESSEL GEAR V DATE TIME(S)

Click on the button [] and the list of all the records to be imported will be shown.

If the import procedure found repeated records the list of the double records will be displayed.

	SURVEY	UNIT	HAUL	VESSEL	GEAR	۷	DATE	TIME(S)	LAT.° +
•	ADRIAMED 2004	ALA	3	PEC	TARTA		07/11/2005	6.25	
-	ADRIAMED 2004	ALA	5	PEC	TARTA		07/11/2005	9.25	
	ADRIAMED 2004	ALA	7	PEC	TARTA		06/11/2005	14.25	
	ADRIAMED 2004	ALA	8	PEC	TARTA		07/11/2005	8.05	
	ADRIAMED 2004	ALA	10	PEC	TARTA		07/11/2005	14.00	
	ADRIAMED_2004	ALA	12	PEC	TARTA		07/11/2005	12.40	
- 8	ADRIAMED 2004	ALA	14	PEC	TARTA		08/11/2005	16.40	

When invalid hauls are listed the system will ask to verify the data before the completion of the import procedure.

	VALID.	SURVEY	UNIT	HAUL	SPECIES	TOT. W.	TOT. N.	NUM	WEIGHT	ADD NUM 🔺
	N	ADRIAMED_2001	HRV	8	ELEDMOS	9.44	41	0	0	4:
	N	ADRIAMED_2001	HRV	22	ELEDMOS	1.5	16	0	0	21
	Y	ADRIAMED_2001	ALB	3	PAGEERY	3.2	164	0	0	4.
T	Y	ADRIAMED_2001	ALB	3	PAPELON	1.32	188	0	0	4:
T	Y	ADRIAMED_2001	ALB	5	ELEDMOS	0.5	2	0	0	
	Y	ADRIAMED 2001	ALB	5	PAGEERY	8	140	0	0	2!

5.5 Export

The procedure for exporting ATrIS records to another system is similar to that described in the para 5.1 Import.

1. Choose the Survey

Using the scroll bar select the survey corresponding to the data to be exported (field SURVEY)

2. Choose the type of data you want to export

Using the scroll bar indicate in the field DATA TYPE if the data to be exported are haul, catch or biological data (see para 5.2 and 5.3).

- 3. Choose the species you want to limit the export procedure (if applicable) Using the scroll bar indicate one species in the field SPECIES to limit the data to export to that species
- 4. Select the format type

Click on the check for AdriaMed Databank format or MEDITS format. Both the Import/Export button procedures will be activated.

DATA INPUT AND RETRIVIAL DAT.	A ANALYSIS IMPORT/EXPORT DATA	SETUP UTILITIES	
SURVEY	DATA TYPE HAUL DATA	SPECIES	
FILE: C:\ADRIAMED\TRAWL B	ASEVATSDM_Access\IMPORT.xls	extel file O text fi	LE
	EXPORT	PARALA AT	1=D
CHECK FOR ERRORS	IMPORT SHOW	V DATA TO EXPORT EXPORT	

5. Indicate the file name.

It is possible to create a new file or use an existing one.

Please note that when exporting data to an existing file, it will overwrite the file contents.

The new file can be created directly:

- a) indicate the directory in which the new file should be created,
- b) give a new name to the file and then
- c) click on SAVE.

The new file will be automatically generated. The new file will be shown in the FILE field of ATrIS.

SURVEY DA ADRIAMED_2004 V HAI	IA TYPE	SPECIES	<u> </u>
)] Select a file		2×
MPORT	Savejn: 🗊 (C:)	<u>-</u>	M 🖻 🔳
CHECK FOR ERRORS IMPORT	Adriamed AdriaMed immages AdriaMed Trawl survey AdriaMed Trawl survey Adriametry Arcon Asta	Asfisis3 Atsdm Atsdm Backup bimba Cdrom Dame	Dell drop off point Esri Feis Hpdesk Hpfonts
	•		

6. Click on SHOW DATA TO EXPORT. The system will start to check the data for errors.

Please note that the MEDITS format are exported using the same column names used by MEDITS protocol (in French). Some fields (like the diameter funes=diameter warp) are missing because they are not included in the ATrIS database.

7. Export records by clicking on EXPORT button.

All the records will be finally exported and automatically they will be not displayed in the windows below; the button EXPORT will be disabled. A message box will alert you to the successful export.



6. Data Input and Retrieval

The Data Input and Retrieval panel is opened by default each time the application is accessed.



It visualizes the data included in the database (on the left hand side of the mask) and contains some useful features:

- -Survey features
- -Generate report
- -Visualize data (hauls).

This section is also the starting point for a new data entry (see para 6.3).

6.1 Survey features

This section contains three options: the possibility to map the hauls in the survey selected, the possibility to overview all data, hauls by hauls and the possibility to generate the list of all the species caught.



6.1.1. Map Hauls

Click on the button MAP HAULS and all the hauls of the survey (or units) selected will be shown in a GIS Project. (see para 7.8 for the basic tools to view a map).



6.1.2 Survey Summary

Click on the button SURVEY SUMMARY. A table with all the data displayed by survey, units and hauls will be shown.

On the bottom of the table three buttons will allow the user to create a report (SHOW REPORT), to export to Excel the table (EXPORT To EXCEL) and to close the window (CLOSE).

AD AD AD AD	DRIAMED_2001 DRIAMED_2001 DRIAMED_2001	ALB ALB	06/11/01		STHATOM	VALID.	VESSEL	GEAR	DUR.(m)	SPEED(kn)	LENGHT(m)	DEPTH(m)H	I. SPRE
AD AD AD AD	DRIAMED_2001	ALB	00111101	7	22142		PEC	TARTA	60	2.7	5564	84	1
AD AD AD	RIAMED_2001		06/11/01	24	22144	V	PEC	TARTA	60	2.5	1505153	303	1
AD AD	BIAMED 2001	ALB	06/11/01	32	22143		PEC	TARTA	60	2.6	4915	105	1
AD	711AMED_2001	ALB	06/11/01	34	22145		PEC	TARTA	60	2.7	5000	566	1
	RIAMED_2001	ALB	07/11/01	3	22141		PEC	TARTA	60	2.8	5100	36	1
AD	RIAMED_2001	ALB	07/11/01	5	22142	V	PEC	TARTA	60	2.5	6355	74	1
AD	RIAMED_2001	ALB	07/11/01	8	22142	V	PEC	TARTA	60	2.4	5095	64	1
AD	RIAMED_2001	ALB	07/11/01	10	22142	V	PEC	TARTA	55	2.8	5050	90	1
AD	RIAMED_2001	ALB	07/11/01	12	22142	V	PEC	TARTA	60	2.7	5000	89	1
AD	RIAMED_2001	ALB	07/11/01	16	22143	V	PEC	TARTA	60	2.6	4500	157	1
AD	RIAMED_2001	ALB	07/11/01	18	22143	V	PEC	TARTA	45	2.7	3800	150	1
AD	RIAMED_2001	ALB	08/11/01	14	22143	V	PEC	TARTA	60	2.5	4500	108	1
AD	RIAMED_2001	ALB	08/11/01	22	22143	V	PEC	TARTA	60	2.8	5100	152	1
AD	DRIAMED_2001	ALB	08/11/01	27	22144	•	PEC	TARTA	60	2.4	4000	330	1
AD	RIAMED_2001	ALB	08/11/01	30	22144	N	PEC	TARTA	60	2.5	4500	278	1
AD	RIAMED_2001	ALB	08/11/01	31	22144	V	PEC	TARTA	60	2.6	4750	304	1
AD	RIAMED_2001	ALB	08/11/01	37	22145	V	PEC	TARTA	60	2.8	5100	514	1
AD	RIAMED_2001	ALB	08/11/01	40	22145	V	PEC	TARTA	60	2.5	4500	518	1
						2005							

SHOW REPORT

To generate a report of the data chosen click on the button SHOW REPORT. A report will be created with a header summarizing the basic information on the survey and the list of all the haul data.



EXPORT TO EXCEL

To export data to Excel click on the EXPORT TO EXCEL button. A mask will be shown. Select a directory in which you want to save the file, choose a file name and click on the SAVE button. Please note that this is a save option, it is not necessary to use an existing Excel file but it is possible to create it when selecting the new file name in this mask.



Here is an example of data exported on Excel.

	A1 💌	= 2	SURVEY										
20 33	Α	B	С	D	E	F	G	Н	I	J	К	L	М
1	SURVEY	UNIT	DATE	HAUL	STRATUM	kL	VESSEL	GEAR	DUR.(m)	6PEED(kn	ENGTH(m	DEPTH(m	SPREAD(m)
2	ADRIAMED_2001	ALB	06-nov-01	7	22142		PEC	TARTA	60	2.7	5564	84	15.0
3	ADRIAMED_2001	ALB	06-nov-01	24	22144		PEC	TARTA	60	2.5	1505153	303	15.0
4	ADRIAMED_2001	ALB	06-nov-01	32	22143		PEC	TARTA	60	2.6	4915	105	15.0
5	ADRIAMED_2001	ALB	06-nov-01	34	22145	- 22	PEC	TARTA	60	2.7	5000	566	17.0
6	ADRIAMED_2001	ALB	07-nov-01	3	22141	Т	PEC	TARTA	60	2.8	5100	36	17.0
7	ADRIAMED_2001	ALB	07-nov-01	5	22142		PEC	TARTA	60	2.5	6355	74	15.0
8	ADRIAMED_2001	ALB	07-nov-01	8	22142		PEC	TARTA	60	2.4	5095	64	15.0
9	ADRIAMED_2001	ALB	07-nov-01	10	22142		PEC	TARTA	55	2.8	5050	90	15.0
10	ADRIAMED_2001	ALB	07-nov-01	12	22142		PEC	TARTA	60	2.7	5000	89	15.0
11	ADRIAMED_2001	ALB	07-nov-01	16	22143	Т	PEC	TARTA	60	2.6	4500	157	15.0
12	ADRIAMED_2001	ALB	07-nov-01	18	22143		PEC	TARTA	45	2.7	3800	150	15.0
13	ADRIAMED_2001	ALB	08-nov-01	14	22143		PEC	TARTA	60	2.5	4500	108	15.0
14	ADRIAMED_2001	ALB	08-nov-01	22	22143	Τ	PEC	TARTA	60	2.8	5100	152	15.0
15	ADRIAMED_2001	ALB	08-nov-01	27	22144		PEC	TARTA	60	2.4	4000	330	15.0
16	ADRIAMED_2001	ALB	08-nov-01	30	22144		PEC	TARTA	60	2.5	4500	278	15.0
17	ADRIAMED_2001	ALB	08-nov-01	31	22144		PEC	TARTA	60	2.6	4750	304	15.0
18	ADRIAMED_2001	ALB	08-nov-01	37	22145		PEC	TARTA	60	2.8	5100	514	15.0
19	ADBIAMED 2001	ALB	08-nov-01	40	22145	Т	PEC	TABTA	60	25	4500	518	15.0

6.1.3 Caught Species



Click on the button CAUGHT SPECIES and the table of all the species captured during the survey selected will be displayed.

SURVEY	MEDITS CODE	SCIENTIFIC NAME	HAULS						
ADRIAMED_2001	ABRAVER	Abralia veranyi	(ALB):14 18 27 30 31 34						
ADRIAMED_2001	ABRRALB	Abra alba	(ALB):34						
ADRIAMED_2001	ALLOSUB	Alloteuthis subulata	(ALB):16						
ADRIAMED_2001	ANTOMEG	Antonogadus megalokynodon	(ALB):16 18 27						
ADRIAMED_2001	ARGESPY	Argentina sphyraena	(ALB):5 10 12 14 16						
ADRIAMED_2001	ARIOBAL	Ariosoma balearicum	(ALB):10.12						
ADRIAMED_2001	ARISFOL	Aristaeomorpha foliacea	(ALB):24 31 37 40						
ADRIAMED_2001	ARNOLAT	Arnoglossus laterna	(ALB):3 5 8 10 12 18						
ADRIAMED_2001	ARNORUP	Arnoglossus rueppelli	(ALB):22 27 30 31						
ADRIAMED_2001	ASPICUC	Aspitrigla cuculus	(ALB):14 16 18 22						
ADRIAMED_2001	BLENOCE	Blennius ocellaris	(ALB):3578101218						
ADRIAMED_2001	BOOPBOO	Boops boops	(ALB): 3 5 7 8 10 12 16 18						
SHOW REPORT	EXPORT 1 EXCEL	0	CLOSE						

SHOW REPORT

To generate a report of the data chosen click on the button SHOW REPORT. A report with a header summarizing the basic information on the survey and the list of all the species will be created.



EXPORT TO EXCEL

To export data to Excel click on the EXPORT TO EXCEL button. A mask will be shown. Select a directory in which you want to save the file, choose a file name and click on the SAVE button. Please note that this is a save option, it is not necessary to use an existing Excel file but it is possible to create it when selecting the new file name in this mask.

		ے <u>ہے</u> ایک ایک ایک
ave in: 💭 (L:)	<u> </u>	
Adriamed	🛄 Asfisis3	🗀 Dell
AdriaMed immages	🚞 Atsdm	🙀 drop off point
AdriaMed Trawl survey	🚞 Backup	🚞 Esri
Albaniaphoto	🚞 bimba	🧰 Feis
Arcon	Cdrom	🛄 Hpdesk
Asfa	🚞 Dame	🚞 Hpfonts

Here is an example of data exported on Excel.

		1803											
	Α	В	С	D	E	F	G	Н	1	J	К	L	M
1	SURVEY	UNIT	DATE	HAUL	STRATUM	κL	VESSEL	GEAR	DUR.(m)	SPEED(kn	ENGTH(m)	DEPTH(m	SPREAD(m)
2	ADRIAMED_2001	ALB	06-nov-01	7	22142		PEC	TARTA	60	2.7	5564	84	15.0
3	ADRIAMED_2001	ALB	06-nov-01	24	22144		PEC	TARTA	60	2.5	1505153	303	15.0
4	ADRIAMED_2001	ALB	06-nov-01	32	22143		PEC	TARTA	60	2.6	4915	105	15.0
5	ADRIAMED_2001	ALB	06-nov-01	34	22145		PEC	TARTA	60	2.7	5000	566	17.0
6	ADRIAMED_2001	ALB	07-nov-01	3	22141	Г	PEC	TARTA	60	2.8	5100	36	17.0
7	ADRIAMED_2001	ALB	07-nov-01	5	22142		PEC	TARTA	60	2.5	6355	74	15.0
8	ADRIAMED_2001	ALB	07-nov-01	8	22142		PEC	TARTA	60	2.4	5095	64	15.0
9	ADRIAMED_2001	ALB	07-nov-01	10	22142		PEC	TARTA	55	2.8	5050	90	15.0
10	ADRIAMED_2001	ALB	07-nov-01	12	22142		PEC	TARTA	60	2.7	5000	89	15.0
11	ADRIAMED_2001	ALB	07-nov-01	16	22143		PEC	TARTA	60	2.6	4500	157	15.0
12	ADRIAMED_2001	ALB	07-nov-01	18	22143		PEC	TARTA	45	2.7	3800	150	15.0
13	ADRIAMED_2001	ALB	08-nov-01	14	22143		PEC	TARTA	60	2.5	4500	108	15.0
14	ADRIAMED_2001	ALB	08-nov-01	22	22143		PEC	TARTA	60	2.8	5100	152	15.0
15	ADRIAMED_2001	ALB	08-nov-01	27	22144		PEC	TARTA	60	2.4	4000	330	15.0
16	ADRIAMED_2001	ALB	08-nov-01	30	22144		PEC	TARTA	60	2.5	4500	278	15.0
17	ADRIAMED_2001	ALB	08-nov-01	31	22144		PEC	TARTA	60	2.6	4750	304	15.0
18	ADRIAMED_2001	ALB	08-nov-01	37	22145		PEC	TARTA	60	2.8	5100	514	15.0
19	ADRIAMED_2001	ALB	08-nov-01	40	22145		PEC	TARTA	60	2.5	4500	518	15.0
the second se													

6.2 Generate Reports

ATrIS has modules to generate reports. When a table is generated the possibility to create a report is represented generally by a button SHOW REPORT which will automatically create a report of the data selected. In the DATA INPUT AND RETRIEVAL there is a complete section dedicated to the report generation. The option in this panel is particular powerful as it allows the user to create a report summarizing all the data recorded during a survey. It could be useful to create a report annually to archive all the data of a certain survey or to create a report for administrative (ministerial) purposes. The following paragraphs illustrate the steps to generate a report.


6.2.1 Haul Map Report

Click on this button and a report will be generated on all the haul recorded for the survey selected. The haul data are reported (start point and end point, gear, vessel, etc) and the list of the catches for that haul. The information on the person who performed the data entry or any modifications are shown in the report but they can be omitted (as illustrated in Chapter 4, para 4.16.2).

S REPORT				_ 0
	AI SCIENTIFIC COO RESPONSIBLE FISH	ORIAMED OPERATION TO SUF VERIES IN THE ADRI	PORT ATIC SEA	<
SURVEY		IT HA	AUL 34	
START POINT		·····		
TIME (httmm) 6:45	LATITUDE (00°00.000 40 ° 59.450	r) LONGITUDE	(00°00.000)	D
	10 001100	010		
TIME (hh:mm) 7:45	LATITUDE (00°00.000 41 ° 02.061	r) LONGITUDE	(00°00.000') 16.823 '	D
LATITUDE AND LONGITUD	EARE REFERRED TO THE WOR	RLD GEODETIC SYSTEM 1984	4 (WG\$84)	
	MEAN SPEED ((n)	ROUTE (%)	DURAT	ON

6.2.2 Biological Data Report

In the same manner the report of all the biological data inserted for each haul of the selected survey can be generated. The report will show haul by haul, species by species (only the target species), all the biological data (length, weight, sex, maturity, maturity scale). As in the hauls data the information on the person who performed the data entry or any modifications are shown in the report but they can be omitted (as illustrated in Chapter 4, para 4.16.2).

BIOLOGICAL DA	NTA						
<i></i>							
	CA/	2				ADRIAMED	
	6.2		P	SCH	NUTIN	TC COOPERATION 1	O SUPPORT
			10		102272		5 MEMATIC DEM
		SURVEY	2004				HAUL
	AD	RIAMED	2001			ALBANIA	34
	MERL	MER	(Merti	iccius	merii	iccius)	
	N. SPEC.	LEN.(mm	i) W. (g)	SEX	MAT	MAT. SCAL	E INSI
	1	200	-1	м	1	MEDITS fishes	
	1	220	-1	м	1	MEDITS fishes	AI
	- 1	234	1	F	3	NOTE: MEDITS fieboe	AI
		2.54	198			NOTE:	
	1	115	-1				
	1	120	-1			NUTE: PROVA BIOLOGICO I	J 9222
	4 <u></u>		-			NOTE:	
	5	125	-1			NOTE	AI
	4	135	-1	1		NOTE:	
	-					NOTE:	
	4	140	-1				
						NOTE	

6.2.3 Cover/Shoulder

ATrIS provide this useful tool to complete the creation of a report. By clicking the COVER and SHOULDER buttons a cover and its corresponding shoulder for the report will be generated. The cover will show the ATrIS logo, the name of the survey selected and the



eventually selected unit. The shoulder will report the ATrIS acronym and the full name and the name of the survey selected.

6.3 Visualize data

On the left hand side the mask SURVEY displays (if any) the surveys already in the database: automatically, by clicking on a survey the list of the Units reported for that survey will be displayed in the mask below (the UNIT mask).

E CONTROL	PANEL		×
Quit ATrIS	Set Up Reference Files	About ATrIS	
DATA INPUT ANI	D RETRIEVAL DATE ANALY	IS IMPORT/EXPORT DATA DATA CONFIGURATION CONSISTENCY CONTROL	
SURVEYS: SURVEYNAM Adri Med_2	1E START DATE 001 03/01/2002	N. DATE SURVEY FEATURES MAP HAULS SURVEY CAUGHT SUMMARY SPECIES	
		GENERATE REPORTS	
COUNTRY NA SLOVENIA	ME START DATE 03/01/2002	IND DATE HAUL DATA BIOLOGICAL DATA REPORT DATA REPORT	
		COVER SHOULDER	
HAULS: NUM DAT 1 03/0	1 (SELECTED 0) TE TIME VAL 01/2002 00.00 Y	APP Y SHOW HAULS	
		DELETE HAUL/S	
		NEW HAUL	
		APPROVE/DISAPPROVE HAUL/S	
	$\overline{}$		

Figure 6.1. The Data Input and Retrieval section.

Both the masks SURVEYS and UNITS display the data with a start and end date. To visualize the stations for each unit click on the HAULS mask: the list of all the hauls carried out will be shown. The mask HAULS automatically gives the number of hauls contained and, if selected, the number of the selected.

The mask HAULS shows information on the date and time of each station and two more values: VAL (Validity) and APP (approved) with a Yes or No (Y/N) code.

VAL (Validity)

This field shows if the haul carried out is valid or not (i.e. the haul was carried out during the night and it is stored just for the archive but cannot be considered valid).

APP (Approval)

This field shows the approval status of the data. Each time new data are inserted in the database the Administrator should verify and approve the new data (see para 6.3.1).

6.3.1 Approve/disapprove a record

To disapprove/approve a record, the button on the right side of the mask can be used. A message box will inform on the number of records to be approved/disapproved and the table will then display the changes.

The Approval/Disapproval operation is only permitted to the ADMINISTRATOR account (see Chapter 4, para 4.16.1).



6.3.2 Delete a record

To delete a haul or a selection of hauls, select with CTRL+ the hauls to be deleted and press the button indicated below. Two message boxes will appear. To delete the records press Yes in both messages.

HAUL	S: 37 (SEL	ECTED O				AdriaMed Trawl Information System	×
NUM	DATE	TIME	VAL	APP	-		
34	06/11/01	06.45	Y	N		YOU WILL DELETE 1 RECORD/S!	
32	06/11/01	08.45	Y	N	-	SHOW HAULS DO YOU WANT TO CONTINUE?	
24	06/11/01	11.01	Y	N			
7	06/11/01	14.01	Y	N			
3	07/11/01	06.25	Y	N			
8	07/11/01	08.05	Y	Y			
5	07/11/01	09.45	Y	Y		DELETE HALL/S	
12	07/11/01	12.01	Y	Y		AdriaMed Trawl Information System	X
10	07/11/01	14.01	Y	Y			_
18	07/11/01	15.01	Y	Y		A THE 1 BECORD /S WILL BE DEFINITIVELY DELETED	
16	07/11/01	16.01	Y	Y		NEW HAUL DO YOU WANT TO CONTINUE?	
27	08/11/01	06.00	Y	Y			
37	08/11/01	08.00	Y	Y			
40	08/11/01	10.01	Y	Y		APPROVE/DISAPPROVE	
31	08/11/01	12.01	Y	Y	-	HAUL/S Yes No	
00	00.111.101	10.01	11	11	Double line		

6.3.3 Add a new haul

To create a new record (haul) press the button indicated below and a new blank mask will appear. For more details see Chapter 6, para. 6.4.3.

NUM	DATE	TIME	VAL	APP		
34	06/11/01	06.45	Y	N		
32	06/11/01	08.45	Y	N	-	SHOW HAULS
24	06/11/01	11.01	Y	N		0.101111020
7	06/11/01	14.01	Y	N		
3	07/11/01	06.25	Y	N		
8	07/11/01	08.05	Y	Y		~
5	07/11/01	09.45	Y	Y		DELETE HALLINS
12	07/11/01	12.01	Y	Y		DELETETIMOLIS
10	07/11/01	14.01	Y	Y		1
18	07/11/01	15.01	Y	Y		
16	07/11/01	16.01	Y	Y		NEW HAUL
27	08/11/01	06.00	Y	Y		
37	08/11/01	08.00	Y	Y		
40	08/11/01	10.01	Y	Y		APPROVE/DISAPPROVE
31	08/11/01	12.01	Y	Y		HAUL/S
20	00.111.101	10.01	V	14	101	

6.3.4 Show hauls

To visualize the data for the haul/hauls selected click on the button "SHOW HAULS".



A mask will appear with all the data. The mask contains information on: Survey,

Hauls,

Stratum,

Meteorological data,

Biological data.

B SK_TO1_HAL	LS Y COUNTRY 2002 - CROATIA	HAUL 21	DA 16/0	TE 2/02	VI	ESSEL DREA	<u>.</u>	GEAR TARTANA	VAL
TIME (00.00) 7:20	LATITUDE (00° 00.000') LONGITL 42° 55.380' 017°	IDE (000° 00.000' 33.050') DEPT 25	H (m) .1	B	OUTE(*) 300	SPE	ED (Knots) D 3.8	URATION (mi 58
END POINT TIME (00.00) 8:18	LATITUDE (00° 00.000') LONGITI. 42° 57.370' 017°	JDE (000° 00.000 28.500	') DEPT 25	H (m) .1	SWE	EP LEN. (150	m) WAF	RP LEN. (m) B 300	OTTOM SHAF
STRATUM 21116 CATCH 38	▼ 10m - 50m North Adriatic Sea (Croa	tia)	н	AUL LEN.	6	303m <u>H. s</u>	PREAD	10m <u>V.</u> s	PREAD
MEDITS	CODE SCIENTIFIC NA	ME	₩. (kg)	NUM	R F	BDRs N	DTES 🛓	WEATHER	R CONDITION
ABRAVER	✓ Abralia veranyi	•	4.8	13	1			SEA C	
ALLOMED	 Alloteuthis media 	•	0.67	97	1				
ARGESPY	 Argentina sphyraena 	•	0.02	2	1			W. DIR. ar	d SPEED (Kr
ARNOLAT	 Arnoglossus laterna 	•	0.16	16	1			_ <u></u>	
BOOPBOO	 Boops boops 	•	8.3	84	1			MAP HAU	NOTE
CEPOMAC	 Cepola rubescens (macrophtha 	alma) 🔹	0.07	6	1			PUSITION	
CITHMAC	 Citharus linguatula (macrolepido) 	itus) 🚽	3.74	141	1			SHOW	
DENTGIB	 Dentex gibbosus 	•	6	65	1			REPORT	
DICELAB	 Dicentrarchus labrax 	•	0.64	1	1				
DIPLANN	 Diplodus annularis 		6.8	170	1				
	 Eledone moschata 		1.832	14	1			H ID 148	
ELEDMOS	 International Control of the Control of the Control of Control o							M BY	
ELEDMOS	Engraulis encrasicholus	-	0.1	20	1				
	Engraulis encrasicholus Gobius niner		0.1	381	1			M PH 29/12	/1899

To visualize all the hauls recorded in the survey use the buttons on the bottom right side of the mask:

DIPLANN	 Diplodus annularis 	6.8 170 1 C	
ELEDMOS	Eledone moschata		
ENGRENC	Engraulis encrasicholus	▼ 0.1 20 1 □ MBY	
GOBINIG	Gobius niger Gobius niger	▼ 5.33 381 1	1
		CLOSE	

The button **I** shows the first record.

The buttons **allow** the user to scroll the hauls

The button visualizes the last record.

The button ***** allows the user to add a new record (see the section on the new data entry, para 6.2.3).

To close the sheet and come back to the list of hauls press the button CLOSE.

CLOSE

The mask also visualizes information on the status of the record:

A BY	ADMIN
H_ID	148
M BY	
M ON	29/12/1899

A BY: Who approved the haul, H_ID: haul ID M BY: who made modifications, M ON: the date of the last modification (see also para 6.3.1 for the haul validation and/or modification).

6.3.4.1 Map Haul Position

To visualize the haul position on a map click on the button MAP HAUL POSITION. ArcView will be opened and a window will be displayed with two options.



SHOW OVERVIEW MAP

Show overview map will show the position of the selected haul in the complete map with a red square.



HAUL POSITION (details)

Haul Position (details) will show, by zooming, the exact position of the start point and the end point of the haul selected.



SHOW REPORT

To generate a report click on the button SHOW REPORT. A report will be created for the selection.

ADRIAMED	
SCIENTIFIC COOPERATION TO SUPPORT RESPONSIBLE FISHERIES IN THE ADRIATIC SEA	PEED (Knots) DURATION (min) 2.6 60
SURVEY UNIT HAUL DATE	
ADRIAMED 2001 ALBANIA 16 07/11/01	VARP LEN. (m) BOTTOM SHAPE
START POINT	650 _
TIME (httmm) LATITUDE (00°00.000') LONGITUDE (00°00.000') DEPTH (m)	
16:01 40 ° 47.500 ' 019 ° 03.750 ' 160	AD 15 V. SPREAD 2 m
END POINT	WEATHER CONDITION
TIME (hh:mm) LATITUDE (00°00.000') LONGITUDE (00°00.000') DEPTH (m)	
17:01 40 ° 50.180 ' 019 ° 03.520 ' 154	SEA CONDITION
LATITUDE AND LONGITUDE A RE REFERRED TO THE WORLD GEODETIC SYSTEM 1984 (WGS84)	
VESSEL MEAN SPEED (Kn) ROUTE (*) DURATION V	ALID W. DIN. and SPEED (Kn)
PACRI 2.6 350 60	
GEAR WARP LENGTH (m) SWEEP LENGTH (m) H. SPREAD (m) V. SPRE	AD (m) MAP HAUL NOTES
TARTANA 650 225 15 2	
LENGTH (m) STRATUM	SHOW
4500 22143 100m - 200m South Adriatic Sea (Albania)	REPORT
BOTTOM SHAPE WE ATHER CONDITIONS SEA CONDITIONS WIND DIRECTION WIND SPE	
Page: If I I I I I	
MEDLINED Mathematics accluption 2 (4 1	
	44 M ON 29/12/1899
MULLBAH V Mulius barbatus V U.5 9 1	

6.3.4.2 Survey

This part of the mask visualizes data on the survey. It contains the following fields (see also Chapter 3):

📾 HAULS DATA						×
SURVEY	COUNTRY	HAUL	DATE	VESSEL	GEAR	VALID
ADRIAMED_2001 -	ALB 🗸	7	06/11/01	PACRI -	TABTANA	. 🗹

SURVEY: the name of the survey

COUNTRY: the name of the country/unit

HAUL: the code of the station in that survey

DATE: the date in which the haul was carried out

VESSEL: the code of the vessel

GEAR: the gear used in that survey

VALID: a check to verify if the haul has been considered valid or not

6.3.4.3 Hauls

This part of the mask contains technical information on the haul.

TIME (00.00) 14:01	LATITUDE (00° 00.000') 41 ° 16.670	LONGITUDE (000° 00.000') 019 ° 10.640	DEPTH (m) 85	ROUTE(*)	SPEED (Knots) 2.7	DURATION (min) 60
END POINT						
TIME (00.00)	LATITUDE (00° 00.000')	LONGITUDE (000° 00.000')	DEPTH (m)	SWEEP LEN. (m) WARP LEN. (m)	BOTTOM SHAPE
15:01	41 14.880	019 13.850	82	225	500	•

A two line series of boxes gives information on the time, LATITUDE, LONGITUDE and DEPTH for both the starting point and the end point of the haul.

On the right hand side of the mask a green box visualizes data on the ROUTE (degrees), speed (Knots), DURATION of the haul (min), SWEEP LENGTH (m) and WARP LENGTH (m) of the gear used, and the BOTTOM SHAPE of that station.

6.3.4.4 Stratum

This line of the mask contains data on the stratum in which the haul was carried out. A twofield box includes the STRATUM code and the description of it. These fields are read-only and they can not be changed when the haul is validated.

STRATUM							
22145	 500m - 800m South Adriatic Sea (Albania) 	HAUL LEN.	5000 m	H. SPREAD	17.87 m	V. SPREAD	0.664 m

Three boxes on the right contain information on HAUL LENGTH, and two technical information of the gear used: the HORIZONTAL SPREAD and the VERTICAL SPREAD of the gear.

HAUL LENGTH/HORIZONTAL SPREAD/VERTICAL SPREAD

ATrIS will automatically calculate the vertical and horizontal spread of the gear, if not available, by clicking on the buttons using the following algorithm:

Gear	AdriaMed (GRUND)	MEDITS
Horizontal spread	13.13+0.00474*L	$17.45613(1-e^{-0.33243((L/100)+3.60468)})$
Vertical spread	0.731-0.000067*L	$5.351(L^{-0.086})$

*L=warp length

HAUL LENGTH

Three different methods are available to estimate the HAUL LENGTH:

-Start point and end point algorithm

-Speed and duration

-Use ArcView

Click on HAUL LENGTH button to visualize the message box. Note that by clicking twice in the field HAUL LENGTH, it is possible to enter in the field and change/delete the contents of it (this is valid only if the haul is a not approved haul or during the data entry procedures).

<pre>sk_T01_HAULS</pre>						×
SURVEY	COUNTRY ALBANIA •	HAUL 34	DATE 06/11/01	VESSEL PACRI •	GEAR TARTANA	VALID
START POINT						_
TIME (00.00) LATITUDE (00.00) 6:45 40 ° 5:45 40 °	00° 00.000') LONGITUDE 59.450 018 018 018 018	(000° 00.000') 45.900	DF	ROUTE(*) 15	SPEED (Knots) DUR	ATION (min) 60
CHOOSE A ME TIME (00 7:45 USE SPEED AP USE ARCVIEW	THODS FROM THOSE LISTI ND DURATION /	ED BELOW:	DEPTH (m) 535	SWEEP LEN. (m)	WARP LEN. (m) BOT	OM SHAPE
22145 CATCH	JINT AND END POINT ALGO		HAUL LEN.	5000 m H. SPR	EAD 17 m V. SPR	AD 1.8 m
MED		p p	kg) NUM	R F BDRs NOT		DNDITION
ABR4			99	1	SEA CONI	DITION
ABRF			99	1		•
		ANUEL	11		W. DIR. and S	PEED (Kn)
ETMOSPI Etmop	oterus spinax	0.445	13			
HELIDAC - Helico	olenus dactylopterus	• 0.052	1	1	MAP HAUL	NOTES

-Start point and end point algorithm

The HAUL LENGTH is estimated in units of nautical miles (nm) by (Sparre and Venema, 1998):

 $D = 60 * \sqrt{(Lat1 - Lat2)^2} + (Lon1 - Lon2)^2 * \cos^2(0.5 * (Lat1 + Lat2))$ where Lat1 = latitude at start of haul (degrees) Lat2 = latitude at end of haul (degrees)

Lon1 = longitude at start of haul (degrees)

Lon2 = longitude at end of haul (degrees)

-Speed and duration

If exact positions are not available, but only the velocity of the vessel and the duration of the haul, then the distance covered per hour can be calculated from:

 $D = V^*t$

where

V = velocity of vessel (knots = nm/hr) t = duration of the haul (min)

-Use ArcView

Another method to estimate the distance covered during the haul is to use the Projected coordinate system of ArcView.

The system will project the start point and the end point in a X-Y plane. In a projected coordinate system, locations are identified by x, y coordinates on a grid, with the origin at the center of the grid. Each position has two values referencing it to that central location. One specifies its horizontal position and the other, its vertical position. The two values are called the x coordinate and y coordinate. In this case the x and y coordinates will be the start and end point.

The system will then calculate the Euclid's distance between the two points which will correspond to the length of the haul.

If the haul length is already calculated and the user wishes to estimate, using another method, the following message will appear. Click Yes to calculate again the value or click No to leave the old value.



When the new value is calculated a message will ask to archive it.



6.3.4.5 Meteorological data

On the right side of the mask four fields represent the meteorological information collected during the survey: Weather condition

Sea condition Wind direction Wind speed (Kn)

6.3.4.6 Biological data

This section of the mask summarizes the biological data of all the species caught during the survey. The fields appear in the following order:

MEDITS Code: the MEDITS code used to identify the species

Scientific name: the scientific name of the species

W (*kg*): the total weight of the species caught during that haul

Num: the total number of specimens caught

RF: the conditional factor used (if available) for the catch

BDRs: a filter to select only the target species (see below)

Notes: shows the notes, if any.

MEDITS COD	E SCIENTIFIC NAME	₩. (kg) NUM	RF	BDRs	NITE
ABRAVER	 Abralia veranyi 	• 4.8	13	1		
ALLOMED	 Alloteuthis media 	• 0.67	97	1		
ARGESPY	 Argentina sphyraena 	• 0.02	2	1		
ARNOLAT	 Arnoglossus laterna 	• 0.16	16	1		
BOOPBOO	 Boops boops 	8.3	84	1		
CEPOMAC	 Cepola rubescens (macrophthalma) 	• 0.07	6	1		
CITHMAC	 Citharus linguatula (macrolepidotus) 	• 3.74	141	1		
DENTGIB	▼ Dentex gibbosus	• 6	65	1		
DICELAB	 Dicentrarchus labrax 	• 0.64	1	1		
DIPLANN	 Diplodus annularis 	• 6.8	170	1		
ELEDMOS	 Eledone moschata 	1.832	14	1		
ENGRENC	 Engraulis encrasicholus 	• 0.1	20	1		
GOBINIG	🝷 Gobius niger	5.33	381	1		
		2.0				

Then, in grey, three fields summarizing the status of the record:

Modified: the date and time of the modification *MOD by:* the name of the last person who modified the record *Catch ID:* the ID that the system automatically assigns to each catch record.

To filter data by <u>target species</u> click on the button **BDRs**. The list will be limited to the target species. To go back to the list of all species, click again on the button BDRs.

Another way to visualize the target species is to double click on the field BDRs.

Double clicking on the field of each species an additional mask will be opened showing the single data for the selected species, for each specimen with data on the number, weight, length, sex and maturity scale associated. On the bottom of the mask the total number of specimens, total male, total female and total indiscriminate and total not classified are available.

CONTROL PANEL	
Quit ATrIS Set Up Reference Files	
SUR SURVEY COUNTRY HAUL DATE SUI ADRIAMED_2001 HRV 1 14/01/2002 1 SUR START POINT HRV 1 14/01/2002 1	VESSEL GEAR VALID ANDREA Y TARTANA Y
ADB TIME (00.00) LATITUDE (00° 00.000') LONGITUDE (000° 00.000') DEPTH (m)	BOUTE(*) SPEED (Knots) DURATION (min)
BIOLOGICAL DATA	
NUM W (n) LEN (mm) SEX MÁT MÁTUREX SCALE	NOTES MODIFIED MOD BY ID TID
1 1 1 MeDITS fishes	
1 1 12 M 1 MEDITS fishes	□ 18/05/2005 20.11.19 ADMIN 11110 1047
1 -1 14 M • 1 MEDITS fishes •	T 18/05/2005 20.11.19 ADMIN 11111 1047
1 16 M 💽 1 MEDITS fishes 💽	T 18/05/2005 20.11.19 ADMIN 11112 1047
1 -1 18 M 🔽 1 MEDITS fishes 💽	T 18/05/2005 20.11.19 ADMIN 11113 1047
1 -1 20 M 💌 1 MEDITS fishes 💌	T 18/05/2005 20.11.19 ADMIN 11114 1047
1 -1 215 F 💽 1 MEDITS fishes 💽	9234 1047
	(AutoNur 1047
TOT: 7 M: 6 F: 1 I: 0 N: 0	SHOW REPORT EXPORT TO EXCEL
Read: IL I FIF of 7	
22 14 12 17 4 3	A BY ADMIN H_ID 96 M ON 23/12/1899
	CLOSE
Record: 1 1 1 1 1/	

If individual data are not available the string reports a -1 value indicating that for that specimen the weight is not available. (This occurs mainly when length measurements on board are taken by length class).

Three buttons on the top of the mask are displayed:

USE INSERT DATA WIZARD	SHOW EXTRA INFO.	DELETE EXTA INFO
		Company and the second s

USE INSERT DATA WIZARD, SHOW EXTRA INFO, DELETE EXTRA INFO.

USE INSERT DATA WIZARD

This tools facilitate users during data entry allowing the user to make a multiple input with individuals with the same characteristics (for more details see para 6.4.3.1).

SHOW EXTRA INFO

The SHOW EXTRA INFO tool displays, if checked, additional information which can be available for a single individual (i.e. Standard Length (ST) or gonad weight).

1	88	BIOLOGI	AL DAT	A																	×
		MERLM	ER (Me	erluccius m	erlu	ccius	5)			USE INSE	RT DATA W	IZARD		SHOW E	XTRA I	NFO.	DEL	ете е>	KTA INFO	J	
		NUM	W. (g)	LEN. (mm)	SE	×	AAT.		MATUR	ITY SCALE		NOTES	L1	L2	L3	W1	₩2	₩3	ID	CAT.ID	
	•	1	-1	10	М	•		MEDITS fishe	s		*								11109	1047	
ľ		1	-1	12	М	•		MEDITS fishe	IS		*								11110	1047	<u>ן</u>
		1	-1	14	М	•		MEDITS fishe	s		•][])[]			11111	1047	Ī
		1	-1	16	м	•		MEDITS fishe	s		*								11112	1047	Ī
		1	-1	18	м	<u> </u>		MEDITS fishe	s		•								11113	1047	Ī
		1	-1	20	м	<u> </u>		MEDITS fishe	s		Ŧ								11114	1047	j
		1	-1	215	F	- 1		MEDITS fishe	is		•][9234	1047]
	*										•								(AutoNur	r 1047]
		TOT:	7	M:	6		F:	1	0	N: 0		shov	V REPO	RT	EXPO	RT TO CEL			CLOSE		
	Rec	tord: 📕	<	1 📕	ÞI Þ*	of	7										-				▼ //

DELETE EXTRA INFO

This tool allows the user to delete additional information previously added.

To add a note double click on the mask, a pop up will be opened, Add the text and click on the button CLOSE. The text will be memorized and the record will show a check on the filed NOTES.

To scroll all the records use the buttons of the bottom of the mask. To close this window and go back to the biological data list click on the button CLOSE or use the symbol X on the top of the window.

When closing the window a warning message will appear if the number of record of biological data does not coincide with the number of specimens caught in the survey (i.e. 58 *Merluccius merluccius* caught in the haul 42, with biological data available just for 4 specimens). Click yes if it is really a problem of subsampling, click no if it is just an error in order to check the record again and if necessary modify it.

BIOLOGIVAL_DATA						- 🗆 ×
NUM W. (g) LEN. (mm) SEX MA	T. MATURITY SCALE	NOTES	MODIFIED	MOD_BY	ID	CAT.ID
1 -1 230 M INFORM	ATION!			ADMIN	10122	2532
1 -1 240 F	LOOK OUT! THE NUMBER OF SPECIME	NS INSERTED IS LOV	VER THEN THE NUMBER	ADMIN	10123	2532
	RECORDED IN THE HAUL FORM! IT IS DUE TO A SUBSAMPLE?			ADMIN	10124	2532
* 1 -1 #					(AutoNu	r 2532
	<u>Yes</u>	No				
TOT: 3 M: 1 F	: 1 I: 1 N: 0	SHO	W EXPORT T	го	CLOSE	
					_	

SHOW REPORT

To generate a report of the biological data chosen click on the button SHOW REPORT. A report will be created with a header summarizing the basic information on the survey, the name of the species and the list of all the biological data, specimen by specimen, with, also, information on the record.

	VSIBLE FIS.	ESPOI	RI	1	F
UNIT HAUL DATE	U		<u> </u>	SURVEY	
ALBANIA 3 07/11/	ALB.		2001	RIAMED	AD
MAT SCALE INSERTRY	MAT	SEY) M (a)		
A DMINNICO 31/01/05	NOTE	M	-1	230	1
A DM INNICO 31/01/05	NOTE:	I	-1	230	1
18: A DMINNICO \$1/01/05 TE:	NOTE:	N	-1	240	1
0 I 1 N 1	F	1	M	3	N. TOT.
A DMINNICO TE: A DMINNICO TE: A DMINNICO TE: A DMINNICO TE: N	NOTE: NOTE: NOTE: F	M I N 1	-1 -1 -1 M	230 230 240 3	1 1 1 TOT.

To visualize all the reports use the buttons on the bottom of the page.

To print the report/s click on the menu bar PRINT button 🚑 , or on the menu FILE/PRINT or click with the right button of the mouse and select PRINT.



EXPORT TO EXCEL

To export filtered data on Excel click on the button EXPORT TO EXCEL. A window will be opened asking the name of the file.

Select a file		? ×	7 🚜 🕨 🦷	i 🌆 🖌 😨	
Savejn: 🗊 (C:)	<u> </u>) 💆 凿 🔳			
Adriamed AdriaMed immages AdriaMed Trawl survey Albaniaphoto Arcon	C Asfisis3 Atsdm Backup bimba Cdrom	Dell drop off point Esri Feis Hpdesk	UL DATE 0 08/11/01	VESSEL PACRI	GEAR TARTANA
Asfa	🗋 Dame	🗋 Hpfonts	Y SCALE	NOTES MODIF	TED MOD_
File <u>n</u> ame: Save as <u>type</u> : Excel Files (*.xls)	Save Cancel			
TOT: 2 Record: 14	M: 1 1 ▶ ▶ ▶ ▶ ★ of	F: 0 I: 1	N: 0	SHOW REPORT	EXPORT TO EXCEL

Choose a file name and select the directory in which you want to put the file. Click on save and the data will be automatically exported on an EXCEL file.

	R1C1		 F03_W 	EIGHT							
	1	2	3	4	5	6	7	8	9	10	11 🗖
1	8 WEIG	03 NUN	F03 MODIFIED	F03 MOD BY	F03 MAT SCALE ID2	B LENG	03 SE	MAT	CATC	BIO DA	F03 MAT SCALE ID
2	-1	1			MEDITS fishes	220	M	1	58	9105	MEDITS fishes
3	-1	1			MEDITS fishes	255	м	2	58	9106	MEDITS fishes
4	-1	1			MEDITS fishes	260	М	2	58	9107	MEDITS fishes
5	-1	1			MEDITS fishes	290	м	2	58	9108	MEDITS fishes
6	-1	1			MEDITS fishes	360	м	2	58	9109	MEDITS fishes
7	-1	1			MEDITS fishes	220	F	2	58	9110	MEDITS fishes
8	-1	1				100	1		58	9111	
9	-1	1			2	105	1		58	9112	
10	-1	8				110	1		58	9113	
11	-1	3				115	1		58	9114	
12	-1	7				120	1		58	9115	
13	-1	2				125	1		58	9116	
14	-1	5				130	1		58	9117	
15	-1	6				135	1.		58	9118	
16	-1	4				140	1		58	9119	
17	-1	1				160	1		58	9120	
18											
19											
20											

6.4 New data entry

When the set up is completed (see chapter 4) new records can be added to the database. The system provides three procedures to add new data:

- 1) Import/Export
- 2) Add New Record
- 3) Add New Record in a selected survey.

Please note that by clicking the button ESC (escape) <u>once</u> on the top left side of the keyboard the field you are updating will be cleared. Double click on ESC will automatically delete all the record (=all the fields).

6.4.1 Import/Export

The Import procedure allows the user to add new data, already on another databank or software, on the ATrIS system. See chapter 5 for a complete description of the method.

E CONTROL	PANEL				×
Quit ATrIS	Set Up Reference Files				
DATA INPUT AN	D RETRIEVAL) DATA ANA Y	SIS IMPORT/EXPORT DATA	DATA CONFIGURATION	CONSISTENCY CONTROL]	

6.4.2 Add New Record

To add a new record click on the NEW HAUL in the section Data Analysis and Retrieval and a new blank mask will appear.

	OL PANEL					
cat ATriS	Set Up F	teres - se Fil	es	About A	ATriS	
TA INPU	T AND RETRIE	VAL DA	ANALY	SIS I IMPORT/E	PORT DATA DATA CONFIGU	RATION CONSISTENCY CONTROL
SURVE	YS:					
SURVEY	/ NAME	START D)ATE	END DATE		
ADHIAM	ED_2001	06/11/20	101	18/02/2002	SURVEY FEATURES	
					MAP HAULS	SURVEY CAUGHT
						SUMMARY SPECIES
					41 12 1	THE AV AT A THE PARTY
and the second					GENERATE REPORTS	
UNITS:	±					
COUNTE	RY NAME	START D)ATE	END DATE	HAUL DATA	BIOLOGICAL
ALBANIA CROATI/	4	14/01/20	101	18/02/2002	REPORT	DATA REPORT
SLOVEN	лĂ	03/01/20	002	03/01/2002		
					COVED	
					COVER	SHOOLDER
HAULS	: 37 (SELE	CTED 0)				
NUM	DATE	TIME	VAL	APP 🔺		
34 22	06/11/2001	09.45	Y			
24	06/11/2001	11.01	Ý	Ý		SHOW HAULS
7	06/11/2001	14.01	Ý	Ý		
3	07/11/2001	06.25	Ý	Ý		
	07/11/2001	08.05	Y	Y		
8	07/11/2001	09.45	Y	Y		
8 5	0771172001		1.1	Y		DELETE HAUL/S
8 5 12	07/11/2001	12.01	Ϋ́	2000000		
8 5 12 10	07/11/2001 07/11/2001 07/11/2001	12.01 14.01	Y	Ý		
8 5 12 10 18	07/11/2001 07/11/2001 07/11/2001 07/11/2001	12.01 14.01 15.01	Y Y Y	Ý Y	_	
8 5 12 10 18 16	07/11/2001 07/11/2001 07/11/2001 07/11/2001 07/11/2001	12.01 14.01 15.01 16.01	Y Y Y	Ý Y Y		
8 5 12 10 18 16 27	07/11/2001 07/11/2001 07/11/2001 07/11/2001 07/11/2001 08/11/2001	12.01 14.01 15.01 16.01 06.00	Y Y Y Y	Y Y Y Y	_	NEW HAUL
8 5 12 10 18 16 27 37	07/11/2001 07/11/2001 07/11/2001 07/11/2001 08/11/2001 08/11/2001	12.01 14.01 15.01 16.01 06.00 08.00	Y Y Y Y Y	Y Y Y Y Y		NEW HAUL
8 5 12 10 18 16 27 37 40	07/11/2001 07/11/2001 07/11/2001 07/11/2001 07/11/2001 08/11/2001 08/11/2001 08/11/2001	12.01 14.01 15.01 16.01 06.00 08.00 10.01	YYYYYY	Y Y Y Y Y		NEW HAUL
8 5 12 10 18 16 27 37 40 31	07/11/2001 07/11/2001 07/11/2001 07/11/2001 08/11/2001 08/11/2001 08/11/2001 08/11/2001	12.01 14.01 15.01 16.01 06.00 08.00 10.01 12.01	YYYYYYY	·		NEW HAUL APPROVE/DISAPPROVE
8 5 12 10 18 16 27 37 40 31 30	07/11/2001 07/11/2001 07/11/2001 07/11/2001 08/11/2001 08/11/2001 08/11/2001 08/11/2001 08/11/2001	12.01 14.01 15.01 16.01 06.00 08.00 10.01 12.01 13.01	****	· Y Y Y Y Y Y Y		NEW HAUL APPROVE/DISAPPROVE HAUL/S

Start to insert all the values needed. The data validation system will detect any error or mistake and will inform the user. For each field the warning/error message boxes are displayed in Chapter 5.

6.4.3 Add New Record in a selected survey

There are two ways to add a new record when a survey is already selected.

A)

If a survey and the relative unit and haul is selected it is possible to add a new record by clicking on the button $\rightarrow \rightarrow$ with the field already partially completed with the survey data (see para 6.2.2).

For example if the survey AdriaMed 2004 is selected with the haul 12 of Albania, the new record will have the data relative to AdriaMed 2004 already in the mask and a successive haul number, 13.

	📾 sk_T01_HAULS
	SURVEY COUNTRY HAUL DATE VESSEL GEAR VALID
	TIME (00.00) LATITUDE (00° 00.000) LONGITUDE (000° 00.000) DEPTH (m) ROUTE(*) SPEED (Knots) DURATION (min)
SHOW HAULS	7.20 42° 55.380 017° 33.050° 25.1 300 3.8 58
	END POINT
· · · · · · · · · · · · · · · · · · ·	TIME (00.00) LATITUDE (00° 00.000°) LONGITUDE (000° 00.000°) DEPTH (m) SWEEP LEN. (m) WARP LEN. (m) BOTTOM SHAPE 818 42° 57.370° 017° 28.500° 25.1
DELETE HAUL/S	21116 - 10m - 50m North Adriatic Sea (Croatia) HAUL LEN. 6803m H. SPREAD 10m V. SPREAD 10m
	CATCH 38
NEW HAUL	MEDITS CODE SCIENTIFIC NAME W. (kg) NUM R F BDRs NOTES
	ABRAVER Abralia veranyi 4.8 13 1 SEA CONDITION
PPROVE/DISAPPROVE	ALLOMED 🖌 Aloteuthis media 💽 0.67 97 1 🗖 🗖
HAUL/S	ARGESPY Argentina sphyraena 0.02 2 1 L K. M. DIR. and SPEED (Kn)
	ARNOLAT Amoglossus laterna 0.16 16 1 C
	BOOPBOO Boops R R 8.3 84 1 C ROPENDE
	CEPOMAC Cepola rubescers (macrophthalma) 0.07 6 1 Cepola rubescers (macrophthalma)
	CITHMAC Citharus linguatula (macrolepidotus) I 3.74 141 1 SHOW
	DENTGIB Derkex gbbosus 5 6 65 1 F
	DICELAB Dicentrarchus labrax D.64 1 1 T
	DIPLANN Diplodus annularis 6.8 170 1 DIPLANN
	ELEDMOS Eledone moschata I.832 I4 I I I I I I I I I I I I
	ENGRENC Engrauís encrasicholus V 0.1 20 1 M BY
	GOBINIG - Gobius niger - 15.33 381 1
	CLOSE

B)

In a similar way it is possible to insert a new record when the data entry is already started. When the haul mask of a new haul is completed click on the button $\blacktriangleright \ast$ and a new mask with the same survey data will be opened. (see on the left side of the figure above).

6.4.3.1 Add biological data to a new record

To add biological data in a new record double click on the scientific name of the selected species. The following mask will be displayed. Fill all the fields and be helped by the options for sex and maturity scale available. A specific tool is the INSERT DATA WIZARD.

🕫 BIOLOGICAL DATA					_ 🗆 🗵
MERLMER (Merluccius merluccius)	USE INSERT D	ATA WIZARD	SHOW EXTRA INFO.	DELETE EXTA INF	0
NUM W.(g) LEN.(mm) SEX MAT.	MAIL PITY SCALE	NOTES	MODIFIED	MOD_BY ID	CAT.ID
1 215 F 1 MEDI	ITS fishes			9234	1047
		• 🔳		(AutoNi	um 1047
			EXPORT TO	CI 965	1
		SHOW REPO	EXCEL		-
Record: K 4 1 + + + of 1					1.

USE INSERT DATA WIZARD

When click on the USE INSERT DATA WIZARD button the following mask will be displayed. This tool allow the user to insert biological data for a group of individuals having the same biological characteristics.

BIOLOGICAL DATA			×
MERLMER (Merlu	uccius merluccius)		-
SEX	MAT. MATUF	RITY SCALE	
		•	
MIN. LEN	MAX. LEN	STEP	
NUM W.(g) L	EN.(mm) SEX MAT.	MATURITY SCALE	
TOT:	RUN WIZARD	LOAD DATA CLOSE	-
Record: III I			11.

Choose the SEX and then the maturity stage (MAT) and the related maturity scale. Select the length interval in which the individuals should be placed (minimum length (MIN.LEN) and the maximum length (MAX.LEN).

Please note that if a maturity scale value is missing the system will display the following warning message.



Select a STEP: this number indicates the step of the length class is to be selected (e.g. if step is = 5, ATrIS will automatically generate length class 5 by 5 (10-15-20-25-30...).

Modify the number of specimens if more than one individual is in a given length class.

Then click on RUN WIZARD. The information selected will be showed indicating the total number of individuals added.

-8	BIOLO	GICAL DAT	A					_ 🗆 🗵
Γ	MEF	RLMER (Me	rluccius m	erluccius)				
		SEX	SEX MAT. MATURITY SCALE					
		M 🚽	1	MEDITS	fishes		-	
		MIN. LEN	10	MAX. LEN	20	STEP	2	
	NU	M W. (g)	LEN. (mm)	SEX MA	.т.	MATURITY	' SCALE	
•	1	-1	10	M 1	MEDITS f	ishes		
	1	-1	12	M 1	MEDITS F	ishes		•
	1	-1	14	M 1	MEDITS f	ishes		•
	1	-1	16	M 1	MEDITS f	ishes		•
	1	-1	18	M 1	MEDITS F	ishes		•
	1	-1	20	M 1	MEDITS f	ishes		-
F	<u>p</u>							
							1	
⊢								
	TO	T: 6	RI	JN WIZARD	L	OAD DATA	CLOS	E
Re	ecord:	HAL	1	▶ ▶ * of 6				•

At this point it is possible to load the data in the system by clicking on the LOAD DATA button.

A warning message indicating that the number of specimens inserted has been changed will be displayed.

AdriaMo	ed Trawl Information System 🔀
?	ATTENTION! THE NUMBER OF SPECIMENS INSERTED IS GREATER THEN THE NUMBER RECORDED IN THE HAUL FORM! DO YOU WANT TO MODIFY THE NUMBER OF SPECIMENS CAUGTH?
	Yes No

Please note that if the values inserted do not follow the rules indicated by the Administrator the following message can be shown.

AdriaMed	t Trawl Information System 🔀
٩	The value you entered doesn't meet the validation rule defined for the field or control.
	To see the validation rule, click Design view, click the appropriate field, and then, if the property sheet isn't open, click the Properties button on the toolbar. Then click the Data tab.
	To solve this problem, enter a value that meets the validation rule, or press ESC to undo your changes.

6.5 Data validation system

The data validation system comprises a controlled data entry system (which verifies field consistencies) and illegal data checks which filters values that are literally impossible for the actual phenomenon of interest. Hereunder a list, divided by topic, of typical warning or error message that could be displayed by ATrIS is given.

HAUL LENGTH

When calculating the haul length e series of error messages could be shown. If the Speed and Duration method is selected and the SPEED and/or DURATION fields are not completed the system will advise you.



If the ArcView method is selected and the END POINT is not inserted the system can calculate it. Click YES if the end point has to be calculated by the system. Click NO to modify and insert the correct value in the field END POINT.



START POINT END POINT

If the start point or the end point fields are not completed a series of error messages will appear.

DEPTH

If the depth field is not complete (e.g. the end depth is missing) the error message will inform the user.

sk_T01_HAULS			
SURVEY	COUNTRY	HAUL	DATE
ADRIAMED_2004 -	ALBANIA 💽	44	03/03/03
START POINT			
TIME (00:00) LATITUDE (00° 00.000') LONGITUDE	(000* 00.000*)	DEPTH (m)
20:25 41	23.000 000	00.000	22
END POINT			
TIME (00.00) LATITUDE I	(00° 00.000') LONGITUDE	(000° 00.00° r	DEPTH (m)
21:26 44 °	52.000 019 °	52.000	
STRATU 50-100			
	OUT! "START DEPTH" AND	O "END DEPTH	ARE BOTH NEEDED!
	OK.		

TIME

If the fields related to the time are not completed the error message shown below will appear.

🖴 sk_T01_HAULS						x
SURVEY	COUNTRY	HAUL	DATE	VESSEL	GEAR	VALID
ADRIAMED_2004	ALBANIA	44	03/03/03	ANDREA		V
START POINT						
TIME (00.00) LATITUDE 20:25 41	(00° 00.000') LONGITU 23.000 000 °	DE (000° 00.000') 00.000 '	DEPTH (m) 22	ROUTE(*)	SPEED (Knots) DURATI	ON (min)
END POINT TIME (00.00) NTITUDE	(00° 00.0) ERROR				ARP LEN. (m) BOTTON	I SHAPE
	52.00 A LOC)K OUT! "START "	TIME" AND "END TI	ME'' ARE BOTH NEED	EDI 12	
50-100 ·			OK		17 m V. SPREAD	1.8 m
MEDITS CODE	SCIENTIFIC NAI	ME V	W. (kg) NUM	RF BDRs NU	WEATHER CONI	

STRATUM

If a stratum not included in the setup, or a wrong value is inserted in the field, the error message below will inform the user (e.g. in the example below the start depth in 22 and the end depth is 23 so the stratum could not be the 50-100 m stratum).



BIOLOGICAL DATA

Insert the data related to a single species one by one.

WEIGHT

If the weight is missing (or if no available the value -1 is not set) the error box shown below will be opened.



LENGTH

If the length is missing an Access error box will appear. Click on OK and add the length value. By default the field length is different from zero, therefore any time the length measure is equal to zero the error box will appear.

END POINT TIME (00.00) LATITUDE (0 21:26 44 ° STBATIUM	ATSDM The field 'T02_CA property for this fie	TCHES.F02_NUM' can't co Id is set to True. Enter a v	ontain a Null value bec alue in this field.	ause the Require	d
10-50					17 m V. SPREAD 1.8 m
CATCH MEDITS CODE			Help		WEATHER CONDITION
MICMPOU Micromes	sistius poutassou	0.5 1			
ACANPEL Acanthe	ohyra pelagica	2.3 3	1		-
NEPRNOR Nephrop	s norvegicus	0.1 1	1		W. DIR. and SPEED (Kn)
ACANPEL Acanthe	ohyra pelagica	• 12			
*			#Em] 📰 [10	MAP HAUL NOTES POSITION

To insert biological data related to a target species double click on the species name and the mask for the biological data will be opened. A series of controls are located in this section to help the error control.

SEX

If the sex is missing the error message will appear.

	SURVEY	COUNTRY Albania	HAUL 44	DATE 03/03/03	VESSEL ANDREA	-	GEAR TARTANA		×
BIOLO	GIVAL_DATA M W. (g) LEN. (mm) SEX	MAT. MAT	FURITY SCALE	NOTI	ES MOD	DIFIED	MOD_BY	ID	
./ [1 * [1	-1 2 HEr		ERROR					11056 (AutoNur	7872
				OUT! "SEX" IS NEEI	DED!			<u>.</u>	
				OK					

SEX/MATURITY SCALE

If the sex does not match with the maturity scale chosen a error message will be displayed (e.g. if Indiscriminate is selected in the sex field a maturity scale cannot be stored). Please check that the maturity scale configured in the Set up Panel (see para 4) contains the stage you indicated.

AdriaMe	d Trawl Information System	\times
	ATTENTION! YOU CAN'T STORE A MATURITY STATE VALUE OR INDICATE A MATURITY SCALE!	4

MATURITY SCALE

If a wrong value in the maturity scale is inserted (e.g. higher than the maximum stage of the scale, on a scale 1-4 stage a value of 7) the error message below will be displayed.

AdriaMe	d Trawl Information System 🔀
	ATTENTION! A VALUE FOR THE MATURITY SCALE USED IS NEEDED!
	<u>ОК</u>

NUMBER

If the number of specimens inserted is higher than that specified in the total catch the following warning message will appear asking to modify the number of specimen in the total catch or to delete the specimens. (e.g. in the total catch there are 12 *Merluccius merluccius* and in the biological data mask there are 13 specimens)



7. Data Analysis

The Data Analysis panel allows users to run routines to analyze stored data. Using this panel the following analysis can be performed: Length Frequency distribution, Sex ratio, Length frequency/Maturity scale, Length frequency/Sex, Biomass/Abundance Indexes, CPUE.

CONTROL PANEL	X
Quit ATrIS Set Up Reference Files	
DATA INPUT AND RETRIEVAL DATA ANALYSIS IMPORT/EXPORT DAT	A DATA CONFIGURATION CONSISTENCY CONTROL
SURVEYS: MONTH SURVEY NAME START DATE END DATE ADRIAMED_2001 06/11/2001 18/02/2002 Mar Apr May Jun Jul Aug Sep	USER DEFINED STRATA SCHEME C USE SURVEY STRATA SCHEME C USE STRATA AGGREGATION SCHEME C USE ONLY HAULS DEPTH C USE GIS TOOLS TO DEFINE STRATA
UNITS: Aug Nov	SPECIES: 🗖 USE CATEGORY
COUNTRY NAME START DATE END DATE ALBANIA 06/11/2001 08/11/2001 CR0ATIA 14/01/2002 18/02/2002 SLOVENIA 03/01/2002 03/01/2002	SELECTION PARAMETERS
STRATA	MIN MAX CLASS SIZE(mm) LENGTH INTERVAL(mm) USE LENGTH-WEIGHT BELATIONSHIP
STRATUM DESCRIPTION	SEX MATURITY
21111 10m - 50m North Adriatic Sea (Slovenia) 21116 10m - 50m North Adriatic Sea (Croatia) 21117 50m - 100m North Adriatic Sea (Croatia) 21118 100m - 200m North Adriatic Sea (Croatia)	USE MATURITY SCALE CONVERSION RULES
21119 200m - 500m North Adriatic Sea (Lroatia) 22141 10m - 50m South Adriatic Sea (Albania) 22142 50m - 100m South Adriatic Sea (Albania)	USE ALL DATA
22143 100m - 200m South Addiatic Sea (Albania) 22144 200m - 500m South Addiatic Sea (Albania) 22145 500m - 800m South Addiatic Sea (Albania)	CALCULATE MAP OF INDEXES
	MULTIPLE INDEX ANALISYS SETUP LEGENDS
11	

On the left side of the panel the SURVEYS, UNITS and STRATA are displayed. On the right side there are some tools to customize the queries and define the selection parameters.

The following general step should be followed to perform the analysis of data.

- 1) Select the Strata scheme (USER DEFINED STRATA SCHEME, see para 7.1).
- 2) Select SURVEYS. Please note that a multiple choice can be performed.
- 3) Select MONTH (if applicable)
- 4) Select UNITS. Please note that a multiple choice can be performed.
- 5) Select the STRATA stratum/strata (a multiple selection is possible).
- 6) Select a species or category (if applicable, see para 7.2).
- 7) Select parameters for the species or category (if applicable, see para 7.2.1).
- 8) Click on the CALCULATE INDEXES/MAP INDEXES/MULTIPLE INDEX ANALYSIS buttons (see para 7.5 and 7.6).

For each section please refer to the paragraphs below.

Please note that these examples are valid whichever to the strata scheme is used.

7.1 User defined strata scheme

ATrIS was designed to store data from the AdriaMed Trawl Surveys. However the possibility to include data from other database or archives has been included. Thus the data analysis routine allows users to use the defined strata scheme applied during the surveys of AdriaMed or to use a user-defined scheme of aggregation.



Hereunder the available options are listed and illustrated:

- -Use survey strata scheme
- -Use strata aggregation scheme
- -Use only hauls depth
- -Use GIS Tools to define strata

7.1.1 Use survey strata scheme

With regard to station selection and geographical allocation, random depth-stratified sampling design was applied to the AdriaMed Trawl Survey, the same as is used in the case of the MEDITS programme in the Adriatic (Anonymous, 1998).

Strata were defined according to the following bathymetric limits: 10-50 (GSA 17, GSA 18) 50-100 (GSA 17, GSA 18) 100-200 m (GSA 17, GSA 18) 200-500 m (GSA 18). 500-800 m (GSA 18).

The USE SURVEY STRATA SCHEME allows performing data analysis on the strata defined during the surveys. The procedure is the same as that reported in para 7.5.

7.1.2 Use strata aggregation scheme

ATrIS allows the user to choose the survey strata scheme as given by the AdriaMed Trawl survey protocol.

The procedure permits the modification of the survey strata available and the aggregation of new strata indicating

1. Check on USE STRATA AGGREGATION SCHEME

2. Click on USE STRATA AGGREGATION SCHEME (the window STRATA AGGREGATION FORM will be opened).

	🖽 STRATA AGGRE	GATION FOR	М				×
USER DEFINED STRATA SCHEME	SURVEY STR	ATA:			AGGREGAT	ED STRATA:	
O USE SURVEY STRATA SCHEME	CODE	UNIT MIN	MAX		CODE	MIN MAX	(
O LISE STRATA ACCREGATION SCHEME	21101	ITA 10	50		I_STRATO	10 50	
OSE STRATA ADDREDATION SCHEME	21102	ITA 50	100		II_STRATO	50 100	
O USE ONLY HAULS DEPTH	21105	ITA 10	100			200 500	
	21107	ITA 100	200		V STRATO	500 800	
C USE GIS TUUES TU DEFINE STRATA	21109	ITA 200	500		1_011110	1000 1000	
	21110	ITA 500	800				
	21111	SLO 10	50	1			
	21116	HRV 10	50				
	21117	HRV 50	200	· · · · · · · · · · · · · · · · · · ·			
	21119	HBV 200	500				
	21110	11111 1200	000				
							_
					NAME:		
	DETAILS OF AGGI	REGATED STR	RATA:		TOT. SURFAC	E (Km2):	
	STRATIIM	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	DESCR			MAY DEDTH	SUPEACE
	STICKTOW		DESCR		MIN DEF TH	MAA DEI III	SOUTACL
	Record: 14 4		▶I ▶*E				

3. Select the strata to aggregate (e.g. 10-50 m of different units)

4. Give a name to the new aggregated strata. If this step is skipped a warning message will appear.

AdriaMe	d Trawl Information System 🛛 🔀
٩	LOOK OUT! THE NAME OF THE AGGREGATION SHOULD AT LEAST A 15 LETTERS STRING!
	<u>ОК</u>

5. Click on the right arrow. The strata selected will be automatically displayed in the right box AGGREGATED STRATA, disappearing from the left box. Details on the aggregated strata will be displayed at the bottom of the window showing the stratum, the stratum description, the depth range (minimum and maximum depth of the selected stratum) and the surface covered by the stratum.

RATA AGGR	EGATIO	I FORI	ł				
SURVEY STR	ATA:				AGGREGAT	ED STRATA:	
CODE	UNIT	MIN	MAX		CODE	MIN MA	×
21101	ITA	10	50		I_STRATO	10 50	
21102	ITA	50	100		II_STRATO	50 100	D
21106	ITA	10	50		III_STRATO	100 200	D
21107	ITA	50	100		IV_STRATO	200 500	D
21108	ITA	100	200		V_STRATO	500 800	D
21109	ITA	200	500				***
21110	ITA	500	800				
21111	SLO	10	50				
21116	HBV	10	50				
21117	HBV	50	100				
21118	HBV	100	200				
21119	HBV	200	500				
				N		כ	_
AILS OF AGG	REGATE	D STR	ATA:		TOT. SURFAC	E (Km2):	3150
STRATUM		1000	DESCRIF	FION	MIN DEPTH	MAX DEPTH	
)10-050IT4	STRA	TO I			10	50	0 2582
1144	10	ED C	Pourth Adviat	See (Albenie)	10	E	n see

Please note that to change/delete strata already aggregated the aggregation should be dissolved. Select the strata to be disaggregated and click on the left arrow. The aggregated strata will disappear and the original strata will be displayed again in the SURVEY STRATA box.

STRATA AGGRE	GATION	I FORI	4						2
SURVEY STR	ATA:				AGGREGAT	ED STRAT	FA:		
CODE	UNIT	MIN	MAX		CODE	MIN	MAX		
21101	ITA	10	50		I_STRATO	10	50		
21102	ITA	50	100		II_STRATO	50	100		
21106	ITA	10	50		III_STRATO	100	200		
21107	ITA	50	100	-	IV_STRATO	200	500		
21108	ITA	100	200		V_STRATO	500	800		
21109	ITA	200	500						
21110	ITA	500	800						
21111	SLO	10	50						
21116	HBV	10	50						
21117	HRV	50	100						
21118	HBV	100	200						
21113	I DD Y	200	000						
				N	ME: I STRATO)		_	
					1-				
								0.1 50	
ETAILS UF AGG	REGALE	DSTE	ATA:		TUT. SURFAC	E [Km2]:		3150	
STRATUM			DESCR	IPTION	MIN DEPTH	MAX DEI	PTH S	SURFACE	Π
010-050IT4	STRA	TO I		the second second second	10		50	2582	
221/11	10m -	50m 5	outh Adri	atic Sea (Alhania)	10		50	568	

Once the new aggregation scheme is configured the DATA ANALYSIS Panel will change: the UNITS box will be disabled (the UNITS are only related to the survey strata scheme) and the new strata scheme will be shown.



The data can now be processed using the new strata aggregation scheme as described in para 7.5.

7.1.3 Use only hauls depth

The third option to define a strata scheme allows the user to customize the strata by choosing the range of depth on which to focus the query.

1. Check on USE ONLY HAULS DEPTH

2. Click on USE ONLY HAULS DEPTH (the window USED DEFINED BATHYMETRIC STRATA will be opened).

STRATUM MIN. DEPTH MAX. DEPTH SURFACE (km2) MODIFIED MOD. BY 10 10 30 100000 24/01/0518.46.21 ADMIN 02 30 50 100 24/01/0518.46.28 ADMIN 03 50 75 100 24/01/0518.46.44 ADMIN 04 75 100 24/01/0518.46.56 ADMIN 05 100 150 200 24/01/0518.47.10 ADMIN 06 150 200 24/01/0518.47.112 ADMIN				STRATA	BATHYMETRIC	ER DEFINED E	US
▶ 10 30 100000 24/01/05 18.46.21 ADMIN 02 30 50 100 24/01/05 18.46.28 ADMIN 03 50 75 100 24/01/05 18.46.28 ADMIN 04 75 100 100/105 18.46.44 ADMIN 05 100 150 200 24/01/05 18.47.10 ADMIN 06 150 200 200 24/01/05 18.51.12 ADMIN	MOD. BY	MODIFIED	SURFACE (km2)	MAX. DEPTH	MIN. DEPTH	STRATUM	
02 30 50 100 24/01/05 18 45 28 ADMIN 03 50 75 100 24/01/05 18 46 24 ADMIN 04 75 100 100 24/01/05 18 46 56 ADMIN 05 100 150 200 24/01/05 18 45 10 ADMIN 06 150 200 24/01/05 18 45.112 ADMIN	ADMIN	24/01/05 18.46.21	100000	30	10		01
03 50 75 100 24/01/05 18.46.44 ADMIN 04 75 100 100 24/01/05 18.46.56 ADMIN 05 100 150 200 24/01/05 18.47.10 ADMIN 06 150 200 200 24/01/05 18.51.12 ADMIN	ADMIN	24/01/05 18.46.28	100	50	30		02
04 75 100 100 24/01/05 18.46.56 ADMIN 05 100 150 200 24/01/05 18.47.10 ADMIN 06 150 200 24/01/05 18.51.12 ADMIN	ADMIN	24/01/05 18.46.44	100	75	50		03
05 100 150 200 24/01/05 18.47.10 ADMIN 06 150 200 200 24/01/05 18.51.12 ADMIN	ADMIN	24/01/05 18.46.56	100	100	75		04
06 150 200 200 24/01/05 18.51.12 ADMIN	ADMIN	24/01/05 18.47.10	200	150	100		05
	ADMIN	24/01/05 18.51.12	200	200	150		06

Please note that the interval should be defined in a range which is different from the existing survey strata scheme (e.g. a new stratum between 10 and 50 m cannot be selected because it is already used by the survey strata scheme). An error message will be displayed.

	USE	R DEFINED) BATH	YMETRIC	STRATA					×
		STRATUM	MI	N DEFTH	MAX. DEFTI	SURFACE (km2)	MODIFIED	MOD	. BY	
.0	01			10	50	100000	04/02/05 12.19.51	ADMIN	INICO	10
	02			20	90	100	24/01/05 18.46.28	ADI	MIN	10
8	03		dia Ver	I Troubled	ormation Cust				MIN	
	04		unamet	TTawi Ini	onillation syste	3111			MIN	
	05		-	тоок онт		SEBTED A WRON	G BATHYMETRIC INT	FRVALL	MIN	
1	06		CO	THE NEW	INTERVAL CAN	'T INTERSECT AN	EXISTING ONE!		MIN	
*			1.0							20
						OK				

Once the new aggregation scheme is configured the DATA ANALYSIS Panel will change: the UNITS box will be disabled (the UNITS are only related to the survey strata scheme) and the new strata scheme will be shown.



When the new strata are defined the data can be processed using the new strata aggregation scheme as given in para 7.6.

7.1.4 Use GIS Tools to define strata

This option is one very powerful feature of ATrIS which allows users to define strata with particular characteristics. The tools set up contains a sample theme map but the users knowledgeable in GIS can employ additional theme if they wish to work with the data more independently (for more details see para 7.9).

Here is a guided example to use the theme provided by ATrIS.

1) Select a Survey (i.e. AdriaMed 2001)

7) Select a Country (i.e. Albania)

Click on USE GIS TOOLS TO DEFINE STRATA button. A table will be displayed showing a strata defined by bottom sediment type. Minimum and maximum depth value and surface of the new strata may not be modified if this strata example is used.

STRATUM	DESCRIPTION	MIN. DEPTH	MAX. DEPTH	SURFACE (km2)	MODIFIED	MOD. BY	
	clay	-999	-999	2160	19/05/05 16.16.15	ADMIN	Γ
4	mad	-999	-999	4346	19/05/05 16.16.15	ADMIN	
6	maddy sand	-999	-999	11394	19/05/05 16.16.15	ADMIN	Γ
	sand	-999	-999	9268	19/05/05 16.16.15	ADMIN	Γ

8) Click on OPEN GIS FOR STRATA CALCULATION button. ATrIS will launch ArcView and the following map will be shown.



9) Click on the MENU bar on ATrIS and select the USE GIS to assign point to strata.

		_ 🗆 🗡
	Scale 1: 4,528,344	982,816.25 ↔ 4,016,418.20 ‡
		_ 🗆 ×
ATriS Help		
Beturn to Access		
<u>Gi</u> enerate Thiessen (Voronoi) polygons <u>Gi</u> enerate Celis		
Summarize index using cells		
Use GIS to assign points to strata		
Erint the Map		
	Image: Second state Image: Second st	Image: Scale 1: 4528.344 Scale 1: 4528.344 Scale 1: 4528.34 Scale 1: 4

10) A table will be shown to select the theme to be used as "Strata theme". Select theme3.shp and click OK.

🔍 ATriS GIS	×
Select the theme to be used as "Strata Theme"	OK
Land_obj.shp Land_shp Theme3.shp 0_50.shp Map_boundary.shp	Cancel

11) A second table will be opened asking to select the "Stratum ID" field. Select stratum_id and click OK.

🧟 ATriS GIS	×
Select the "Stratum ID" field.	ОК
Shape stratum_id Descriptio	Cancel

12) A third table will be shown. If available select the field in which the description data are stored. In this example select Description.

🙋 ATriS GIS	×
Select the field which store the "Description" of strata. If not Exist press Cancel.	OK
Shape 🔼	Cancel
stratum_id	
Descriptio	

13) Now ATrIS will automatically calculate the new strata definition and will create a table with data on the new defined strata. In this example the table corresponds to the original showed in point 3 since no changes have been made.

GIS DEFINED S	INATA					
STRATUM	DESCRIPTION	MIN. DEPTH	MAX. DEPTH	SURFACE (km2)	MODIFIED	MOD, BY
1	clay	-999	-999	2160	19/05/05 16.16.15	ADMIN
MA	mad	-999	-999	4346	19/05/05 16.16.15	ADMIN
MS	maddy sand	-999	-999	11394	19/05/05 16.16.15	ADMIN
SA	sand	-999	-999	9268	19/05/05 16.16.15	ADMIN

- 14) Close the window and check the option button 🔅 . The new defined strata will be shown in the STRATA mask.
- 15) Now that the new strata are defined the data can be processed using the new strata aggregation scheme as reported in para 7.6.

CONTROL PANEL (Unregistered)	X
Quit ATrIS Set Up Reference Files	
SURVEYS: SURVEYS: ADRIAMED_2001 06/01/100 18/02/02 ADRIAMED_2001 06/11/01 18/02/02 ADRIAMED_2004 06/11/01 18/02/02 ADRIAMED_2004 06/11/01 18/02/02 ADRIAMED_2004 06/11/01 18/02/02 ADRIAMED_2004 06/11/01 18/02/02	PORT/EXPORT DATA DATA CONFIGURATION CONSISTENCY CONTROL
UNITS: COUNTRY NAME START DATE END DATE ALBANIA 05/11/01 08/11/01 CR0ATIA 14/01/02 18/02/02 SL 0/04/01 03/01/02	Jul Aug Sep Aug Nov Dec SPECIES:
	SELECTION PARAMETERS MIN MAX CLASS SIZE(mm) LENGTH INTERVAL(mm) USE LENGTH-WEIGHT RELATIONSHIP
STRATUM DESCRIPTION	SEX MATURITY
CL clay MA mad SA sand	CALCULATE SEX RATIO

7.2 Define species or category

The data can be filtered if just one species or category is to be analyzed. The scroll bar allows the user to select from the list of all the species that result from the choice made.

USE CATEGO	RY 🗖	USE SP/CAT LIST	🗖 USE LIST AS ONE
SPECIES:	ABRAVE	R 📕 Abralia veranyi	<u>.</u>

With this option the user has four possibilities:

i) Select just one species/category

ii) Select all the species/category

iii) Select a subsample of species/category (considering them as single species/category, the indexes are calculated species by species/category)

iv) Select a subsample of species/category (considering them as a unique group, the indexes are calculated as a total of a group).

7.2.1 Select a species

To select just on species choose a species name from the scroll bar. Please note that when a species is selected the button SELECTION PARAMETERS (see para 7.2.1) will be activated as well as the corresponding section in blue.

SPECIES:	•	<u>·</u>			
		SPECIES:		*	_
			ABRAVER	Abralia veranyi	
		SELECTION PAR	ABRRALB	Abra alba	
			ACANEXI	Acantephyra eximia	
			ACANPEL	Acanthephyra pelagica	
		LENGTH INT	ACATPAL	Acantholabrus palloni	
			AEQUOPE	Aequipecten opercularis	
			ALCYPAL	Alcyonium palmatum	
		1 Opt Len	ALEPROS	Alepocephalus rostratus	

Please note that to visualize data of all the species no species should be selected in the scroll bar.

7.2.2 Select a category

The data can be filtered by category (see Chapter 4, para 4.8 for the category classification). Clicking on the check USE CATEGORY, the scroll bar will automatically display the category configured during the DATA CONFIGURATION (see para 4.8).

SPECIES:	•
A	Fishes
SELECTION PAF B	Croustaceous Decapoda and Stomatopo
C D	Cephalopods Other commercial species
LENGTH INT E	Other species not of commercial interest

To select just one category choose from the scroll list bar. Please note that to visualize data of all the categories the USE CATEGORY should be checked and no categories should be selected in the scroll bar.

7.2.3 Select use species and category list

ATrIS permits multiple choice for both the species and categories. If check the USE SP/CAT LIST options and click on the relative button the following mask will be displayed.

	USE CATEGORY		USE SP/CAT LI	ST 🗖 U	ISE LIST AS ONE	
SPECIES	LIP					
PECIES:	SELECT TARGET SPE	CIES		SELECTED	SPECIES:	
ABRAVER ABRRALB ACANPEL ACANPEL ACATPAL AEQUOPE ALCYPAL ALEPROS ALLOMED ALLOSPA ALLOSPA ALLOSUB ALLOSFAL ALOPYUL ALOSFAL ALOPHGLA	Alicalia veranyi Abra abo Acanthephyra eximia Acanthephyra pelagica Acantholabrus palloni Aequipecten opercularis Aleporephalus rostratus Alloteuthis media Alloteuthis media Alloteuthis subulata Alopias vupinus Alosa fallax Alpheus glaber		ADD REMOVE	ABRAVER MERLMER MULLBAR NEPRNOR	Abralia veranyi Merluccius merluccius Mullus barbatus Nephrops norvegicus	Þ

It is possible to select those species on which the data analysis should be run by select the name and click on the ADD button. The selected species will be displayed in the SELECTED SPECIES field.

To remove a species name, select the species in the SELECTED SPECIES field and click on the REMOVE button.

The list can be further filtered by target species if click on SELECT TARGET SPECIES. The mask will only show the list of the target species defined during the data configuration (see para 4.11).

SELECTED SPECIES:
ADD

If the USE CATEGORY check is on the USE SP/CAT LIST will display the list of category, and a multiple choice for category is possible.

PECIES:	SELECT TARGET SPECIES		SELEC	TED SPECIES:
A B C D E	Fishes Croustaceous Decapoda and Stomali Cephalopods Other commercial species Other species not of commercial intere	ADD Remove	C	Fishes Cephalopods

7.2.4 Use list as one



The USE LIST AS ONE option is just activated when a multiple choice has been selected (USE SP/CAT LIST checked). With this option the selection made in the USE SP/CAT LIST (see para 7.2.3) can be considered as a single group of species/categories and the information about the single species/category is missed.

For example if the selection comprise two species, i.e. *Merluccius merluccius* and *Mullus barbatus*, the indexes will be calculated as a total indexes of both species as a single group. In this case the species will be displayed on the report as aggregated species (SP.AGG) and a box indicating the species which were selected for the aggregation will be included.

HAUL'S	REPORT									
						RE	SCIENT I SPONSIB	AI FIC CA	O RIAN OOPERA	AED ATION TO S IN THE A
	SLEMEY: SELECTED ST 22141, 2214	ADFIAME FATA: 2, 22143, 2	D_2001 221 44, 221	45	UNIT	: Albai	N A			
	SELECTION FAF	Ametere	LB	L INT:			CLASS	975:		SEX [
	SELECTION PAP	ametere	B	L INT:	 ۲(m)		CLASS	STAF:		SEX [
	SELECTION PAP	ametere	SPECIES	DEPT	H(m) MAX	N/Km2	ST.DEV0	927E: 2.V.	N/h	ST.DEVC.
	SELECTION PAP	ametere 2001	LB SPECIES SPAGG	DEPT	H(m) MA× 800	N/Km2 561.03	CLASS ST.DEV(78.74 -	SIZE: 2.V. 14.03	N/h 69.24	ST.DEVC.' 14.01 - 2
	SURVEY ADRIAMED_1 SURVEY MEDITS CODE	2001 AS ONE SP	LP SPECIES SPAGG FECIES	DEPT MIN 10 SCIEN	H(m) MA× 800	N/Km2 561.03	CLASS ST.DEV(78.74 -	927E: C.V. 14.03	N/h 69.24	ST.DEVC. ^v 14.01 - 2
	SELECTION PAP SURVEY ADRIAMED_1 SPECIES LISTUSEL MEDITS CODE MERILMEF	2001 AS ONE SP	SPECIES SPAGG ECIES smerlucciu	DEP1 MIN 10 SCIEN	'H(m) МАХ 800 ГІГІС NA	N/Km2 561.03 ME	CLASS ST.DEV(78.74 -	922E: 14.03	N/h 69.24	ST.DEVC.' 14.01 - 2
	SELECTION PAP SURVEY ADRIAMED_1 SPECIES USTUSEL MEDITS CODE MERIMEF MULLBAR	2001 AS ONE SP Merlucciu Mullus ba	SPECIES SPAGG ECIES s merlucciu	L INT: DEP1 MIN 10 SCIEN \$	'H(m) MAX 800 TIFIC NA	N/Km2 561.03 ME	ST.DEV(78.74 -	SZZE: 2.V. 14.03	N/h 69.24	95X
	SELECTION PAP SURVEY ADRIAMED_1 SPECIES LISTUREL MEDITS CODE MERLMEF MULLBAR LISED STIPATA S	AMETERE	SPECIES SPAGG SPAGG SPAGG Smerlucciu rbatus		H(m) MAX 800 TIFIC NA	N/Km2 561.03 ME	ST.DEV(78.74-	SZZE: 2.V. 14.03	N/h 69.24	95X
	SURVEY ADRIAMED_: SPECIES USTUSEL MEDITS CODE MERLIMEF MULLBAR USED STRATA S STBATIM	2001 AS ONE SP Merlucciu Mullus ba OHEME FOR	SPECIES SPAGG ECIES smerlucciu rbatus RABUNDAN	L INT: DEPI MIN 10 SCIEN SCIEN ECE INDE	H(m) MAX 800 TIFIC NA XES: BIPTIO	N/Km2 561.03 ME	ST.DEV(78.74-	SIZE: 	N/h 69.24	ST.DEVC ¹ 14.01 - 2

7.3 Selection parameters

When a species is selected the button SELECTION PARAMETERS will be activated. Click on the button and the corresponding section will be activated/disabled.

SELECTION PARAMETERS			
	MIN	MAX	CLASS SIZE(mm)
LENGTH INTERVAL(mm)			
USE LENGTH-WEIGH	IT BEL	ATIONS	HIP
		mene	
SEX MATURITY			
	LALUU	LATE SE	X RATIU
IISE MATUBITY SCA		VEBSIO	NBULES

The data can be thus filtered defining:

--Length interval and/or the class size;

--Sex and maturity and/or the sex ratio.

Two more options help user to define length interval using the L/W relationship or to define sex and maturity using the maturity scale conversion.

LENGTH

The data on the selected species can be redefined if a length interval is chosen. Insert in the two boxes (MIN and MAX) the length range in which to limit the analysis and perform the data analysis (see para 7.5).

Please note that if a length interval is selected the analysis will <u>only</u> be carried out on the portion of the population with the selected characteristics (e.g. if *Merluccius merluccius* has been selected and the length interval chosen is between 10 and 100, the data will be analyzed and the indexes will be calculated just for specimens included between 10 and 100 mm).

CLASS SIZE

The data on the selected species can be limited to a particular class size (mm): select a range and the data will be automatically calculated and displayed on the basis of the class size range chosen. In this case all the data population will be aggregated in the class size selected.

Please note that if original data are already aggregated in class size additional assemblage in class size may be only carried out if the new class size is a multiple of the original class (e.g. if original data are aggregated by 10 class size, the data can be allocated in new classes size of 10, 20, 30 etc. but a class size of 15 cannot be chosen).

Moreover note that the opposite is not possible: if the original data are aggregated in a class size of 10 a new class size of 5 cannot be selected.
The LENGTH INTERVAL and the CLASS SIZE may be combined. Select both the parameters and the data will be calculated and displayed for the length interval and the class size chosen (e.g. if the length interval selected is 10-100 mm and the class size is 10, the data on *Merluccius merluccius* will be limited to the 10-100 portion of the population and will be shown in class size of 10 mm).

Please note that if length interval and/or class size are selected ,a length frequency analysis will be carried out.

USE LENGTH/WEIGHT RELATIONSHIPS

This option is activated only if a length interval is selected. When only length data are available, ATrIS will automatically estimate weight data, using the Length/Weight Relationships

W=a L^b

The parameters a and b are those inserted during the data configuration (see Chapter 4, para 4.9). Hereunder there are two examples. The first example shows the biomass indices (kg/km2) plotted using the GIS tools: the data are not available and are displayed with the symbol X on the map. The second map has been generated using the LENGTH/WEIGHT RELATIONSHIPS option. The data are estimated and displayed on the map.





SEX, MATURITY SCALE, SEX RATIO

The data can be displayed by sex (see Chapter 4, para 4.12 for the definition of sex class). Select the sex to limit the analysis and eventually the maturity scale stage (see Chapter 4, for the definition of the maturity scale).

The data can be displayed by sex ratio. Please note that if a sex is selected and the sex ratio is chosen the system will only display data referred to the selected sex and not the sex ratio.

USE MATURITY SCALE CONVERSION RULES

This option is activated when a sex and a maturity scale are selected. If the data were processed using a different maturity scale this option allows the use of conversion rules determined during the DATA CONFIGURATION. The indexes will be thus calculated using the new maturity scale.

7.4 Use all data

This check allows the use of all the data of the surveys selected. It can be applied when two or more surveys are chosen. An example will clarify the use of this option.

USE ALL DATA LIST OF HAULS

Choose a survey A and then a survey B. The survey A has two units (a, b) and the survey B has the same units a and b and a third one, c: only the common units will be displayed in the window UNITS and used for the data analysis performance.

To perform a data analysis using all the data please check the USE ALL DATA and all the units will be used (a, b and c).

Please note that when the option USE ALL DATA is active the button CALCULATE INDEXES will be disabled. Use the button MAP INDEXES to estimate and visualize the data analysis.

7.5 List of hauls

This option allows the user to calculate indexes for each haul present in the survey/units/stratum selected.

88 IN	IDEXES TABLES												×
S	URVEY ADRIAME	D_2002 U	NIT: I	ULTIPLE SELI	ECTION		NUM	ABER	HAULS AV	AIL.:	4 TOT.	NUM.:	4
	TDATA 21110 21	117 21110 21110	22141	22142 22142	22144 2214	-			TOT. SUR	FACE (km2)		2231	
3	TINATA 21110, 21	117, 21110, 21113,	. 22141,	22142, 22143, 4	22144, 2214;	,	WEI	бНТ	HALLI S AV		4 TOT		4
									TOT SUB	FACE (km2)		2231	
									1			2251	
SEI	LECTION PARAMETE	RS LEN. INT.:		CLASS SIZ	Æ: \$	SEX:		.:			MAT. SU	ALE CUNV.	
HA	ULS INDEXES												
	SURVEY	UNIT	NUM	STRATUM	SPECIES	TOT.N.	TOT.W.	LENGTI	H H.SPREAD	SWEPT A.	DUR.	N/Km2	N/h
▶	ADRIAMED_2002	CROATIA	3	21116	MERLMER	108	12.6000	5747	10	0.05747	49	1879.24	132.
_	ADRIAMED_2002	CROATIA	21	21116	MERLMER	188	17	6803	10	0.06803	58	2763.49	194.
	ADRIAMED_2002	CROATIA	4	21117	MERLMER	81	0.5	7155	10	0.07155	61	1132.08	79.
	ADRIAMED_2002	CROATIA	7	21117	MERLMER	124	8	7038	10	0.07038	60	1761.86	124.
	ADRIAMED_2002	CROATIA	14	21117	MERLMER	435	30.5	7464	10	0.07464	62	5827.97	420.
	ADRIAMED_2002	CROATIA	20	21117	MERLMER	101	4.7	7038	10	0.07038	60	1435.07	101.
	ADRIAMED_2002	CROATIA	22	21117	MERLMER	0	0	457	10	0.00457	4	.00	
-	ADRIAMED_2002	CROATIA	12	21118	MERLMER	87	4.6	7272	10	0.07272	62	1196.37	84.
	ADRIAMED_2002	CROATIA	11	21119	MERLMER	62	1.16	7272	10	0.07272	62	852.59	60.
	ADRIAMED_2002	ALBANIA	3	22141	MERLMER	196	4.6	5186	10	0.05186	60	3779.41	196.
	ADRIAMED_2002	ALBANIA	5	22142	MERLMER	204	4	6667	10	0.06667	80	3059.85	153.
	ADRIAMED_2002	ALBANIA	7	22142	MERLMER	174	7.5	4815	10	0.04815	60	3613.71	174.
	ADRIAMED_2002	ALBANIA	8	22142	MERLMER	128	4.40000	4630	10	0.0463	60	2764.58	128.
	ADRIAMED_2002	ALBANIA	10	22142	MERLMER	236	7	4584	10	0.04584	55	5148.34	257.
	ADRIAMED_2002	ALBANIA	12	22142	MERLMER	304	12.8000	5186	10	0.05186	60	5861.94	304.
	ADRIAMED_2002	ALBANIA	14	22143	MERLMER	160	3.8	5186	10	0.05186	60	3085.23	160.
	ADRIAMED_2002	ALBANIA	16	22143	MERLMER	88	4	4815	10	0.04815	60	1827.62	88.
	ADRIAMED_2002	ALBANIA	18	22143	MERLMER	62	1.56	3334	10	0.03334	45	1859.63	82.
	ADRIAMED_2002	ALBANIA	22	22143	MERLMER	76	3	4321	10	0.04321	50	1758.85	91. 🗸
R	ecord: 🚺 🕢	1 ▶ ▶ ▶ ▶ * of	27	4	-				•				F
-	SHOW REPORT	EXPORT TO EXCEL			CLOSE								

7.6 Calculate Indexes

The button CALCULATE INDEXES starts the calculation of the abundance/biomass indices and CPUE.



When click on the CALCULATE INDEXES button a window will be opened.

SUI STE	RVEY ADRIAMED BATA 21116	_2001	NU	UT:	CROATIA				NUM	IBER	HAULS A	VAIL.: RFACE (km	5 TOT 2)	. NUM.: 7308	5
									WEI	GHT	HAULS A TOT. SUI	VAIL.: RFACE (km	5 TOT 2)	. NUM.: 7308	5
LE	CTION PARAMETEI	RS LEN. IN	IT.: 🔽			SEX:	_ м.	ATURITY:		1					
UD	YAREA INDEXES S	TRATA INDEXE	s l				_			-					
			DEF	тн					DEF	чтн					
	SURVEY	SPECIES	MIN	MAX	N/Km2	ST. DEV.	N/h	ST. DEV.	MIN	MAX	Kg/Km2	ST. DEV.	Kg/h	ST. DEV.	
•	ADRIAMED_2001	ABRAVER	10	50	72.98	36.43	5.11	2.56	10	50	19.59	15.17	1.37	1.07	
	ADRIAMED_2001	ALLOMED	10	50	380.29	311.02	26.64	21.85	10	50	2.64	2.15	.18	.15	
	ADRIAMED_2001	ARGESPY	10	50	7.68	6.46	.54	.45	10	50	.08	.06	.01	.00	
	ADRIAMED_2001	ARNOLAT	10	50	472.48	322.52	33.09	22.67	10	50	13.37	10.30	.94	.72	
Γ	ADRIAMED_2001	ARNOTHO	10	50	149.81	137.54	10.49	9.77	10	50	.56	.49	.04	.03	
	ADRIAMED_2001	BLENOCE	10	50	15.37	9.36	1.08	.67	10	50	.42	.35	.03	.02	
	ADRIAMED_2001	BOOPBOO	10	50	326.51	270.13	22.87	18.98	10	50	32.11	26.73	2.25	1.88	
Т	ADRIAMED_2001	BUGLLUT	10	50	3.84	3.16	.27	.22	10	50	.08	.06	.01	.00	
Γ	ADRIAMED_2001	CEPOMAC	10	50	92.19	39.37	6.46	2.78	10	50	3.69	2.32	.26	.17	
	ADRIAMED_2001	CITHMAC	10	50	1179.27	377.58	82.60	26.67	10	50	63.61	23.52	4.46	1.70	
T	ADRIAMED_2001	DENTGIB	10	50	249.68	209.89	17.49	14.75	10	50	23.05	19.37	1.61	1.36	
Γ	ADRIAMED_2001	DICELAB	10	50	3.84	3.23	.27	.23	10	50	2.46	2.07	.17	.15	
T	ADRIAMED_2001	DIPLANN	10	50	653.02	548.94	45.74	38.57	10	50	26.12	21.96	1.83	1.54	
	ADRIAMED_2001	ELEDMOS	10	50	576.19	125.67	40.36	8.70	10	50	104.87	42.51	7.35	2.94	
T	ADRIAMED_2001	ENGRENC	10	50	99.87	61.27	7.00	4.31	10	50	.69	.36	.05	.03	
t	ADRIAMED_2001	EUTRGUR	10	50	84.51	37.84	5.92	2.69	10	50	10.49	8.68	.73	.62	
T	ADRIAMED_2001	GADUMER	10	50	142.13	120.38	9.96	8.60	10	50	2.03	1.29	.14	.09	
F	ADRIAMED_2001	GOBIFRI	10	50	11.52	10.83	.81	.76	10	50	.06	.05	.00	.00	
T	ADRIAMED_2001	GOBINIG	10	50	1682.48	1177.16	117.85	82.75	10	50	21.63	16.89	1.52	1.19	
eco	ord: 🖬 🔳	1 1 1	* of 5	9											
						-									
		EVDODT T	n l												

In the upper part of the window a summary of the selection made is reported. On the left hand side the Survey, Unit and Strata selected are given. On the right hand side the information on number and weight data are shown.

SURVEY ADRIAMED_2001 UNIT: CROATIA	NUMBER	HAULS AVAIL.: 5 TOT. SURFACE (km2)	TOT. NUM.: 7308	-5
	WEIGHT	HAULS AVAIL.: 5 TOT. SURFACE (km2)	TOT. NUM.: 7308	5

For both the data the hauls available (HAULS AVAIL.), the number of hauls used (TOT NUM) for the estimation and the total surface (TOT. SURFACE (km2)) are given.

Please note that the HAULS AVAIL represents the number of all the hauls in the stratum selected (5 in the stratum 21116: 10-50m). TOT NUM represents the number of hauls used to perform the estimation of the indexes. For example in the AdriaMed surveys, only number data are available (e.g. weight data are not recorded for single specimens): the number of hauls available for the indexes calculated on a number bases is different from that on which the indexes will be calculated on a weight basis.

The window also shows the selection parameters selected during the query to define the query on the species selected: Length interval used (LEN.INT), Sex (SEX) and the maturity (MAT.) selected, the class size selected (CLASS SIZE), the length/weight relationships (L/W REL.) and the maturity scale conversion (MAT. SCALE CONV) if used.

At the bottom of the window the data calculated are displayed: from two to four folders may be visualized: STUDY AREA INDEXES, STRATA INDEXES, TIME SERIES, LENGTH FREQUENCY, SEX RATIO and HAUL INDEXES.

In the STUDY AREA INDEXES data for each species in the chosen interval of strata (e.g. if the strata 10-50 and 50-100 are selected a unique study area will be calculated between 10 and 100 m) considered as a unique study area are calculated.

In the STRATA INDEXES data for each species/selected species in the stratum considered are given.

In the HAULS	INDEXES	data for	each	species/	selected	species	in	the	hauls	conside	red	are
shown.												

		DEF	этн					DEF	тн				
SURVEY	SPECIES	MIN	MAX	N/Km	ST. DEV.	N/h	ST. DEV.	MIN	MAX	Kg/Km2	ST. DEV.	Kg/h	ST. DEV.
ADRIAMED_2001	ABRAVER	10	50	72.98	50.43	5.11	2.56	10	50	19.59	15.17	1.37	1.07
ADRIAMED_2001	ALLOMED	10	50	380.29	311.02	26.64	21.85	10	50	2.64	2.15	.18	.15
ADRIAMED_2001	ARGESPY	10	50	7.68	6.46	.54	.45	10	50	.08	.06	.01	.00
ADRIAMED_2001	ARNOLAT	10	50	472.48	322.52	33.09	22.67	10	50	13.37	10.30	.94	.72
ADRIAMED_2001	ARNOTHO	10	50	149.81	137.54	10.49	9.77	10	50	.56	.49	.04	.03
ADRIAMED_2001	BLENOCE	10	50	15.37	9.36	1.08	.67	10	50	.42	.35	.03	.02
ADRIAMED_2001	BOOPBOO	10	50	326.51	270.13	22.87	18.98	10	50	32.11	26.73	2.25	1.88
ADBIAMED 2001	BUGLLUT	10	50	3.84	3 16	27	22	10	50	08	06	01	00

The data displayed/calculated are the following:

Field	Description
Survey	The selected survey
Species	All the species (if a species is selected this field displays just the selected
	species, see Example C)
Depth MIN	The minimum depth of the selected stratum
Depth MAX	The maximum depth of the selected stratum
N/Km2	The number of individuals per surface unit
ST/DEV (CV%)	The standard deviation of the N/Km2 value. To visualize the Coefficient of
	Variation (CV%) click on the button.
N/h	The number of individuals per unit of time (hours)
ST/DEV	The standard deviation of the N/h value. To visualize the Coefficient of
	Variation (CV%) click on the button.
Depth MIN	The minimum depth of the selected stratum
Depth MAX	The maximum depth of the selected stratum

Kg/Km2	The biomass (Kg) of individuals per surface unit (Km2)
ST/DEV (CV%)	The standard deviation of the Kg/Km2 value. To visualize the Coefficient of
	Variation (CV%) click on the button.
Kg/h	The total weight (kg) of individuals per unit of time (hours)
ST/DEV (CV%)	The standard deviation of the Kg/h value. To visualize the Coefficient of
	Variation (CV%) click on the button.

At the bottom of the window there are three buttons: SHOW REPORT: visualize the report with all the data EXPORT TO EXCEL: export data to an excel file CLOSE: close the window.

Record: II 4	1 ▶ ▶ ▶ ▶ * of 59	4				
SHOW REPORT	EXPORT TO EXCEL		CLOSE			

SHOW REPORT

The report shows in a similar way the same data displayed in the window.



In the TIME SERIES (e.g. only if two or more surveys are selected) a graph showing the indexes per single survey is given (to scroll all the indexes click on the top of the TIME SERIES window: a new graph will appear.



EXPORT TO EXCEL:

If click on the button EXPORT TO EXCEL a new EXCEL file will be automatically opened reporting the data in the same order in which are displayed in the ATrIS window.

Remember to save the data using the command "SAVE AS" of Excel.

Please note that the file on which the system exports data is always the same: if the file used to export a set of data remains opened and a new set of data have to be exported, the system will show a error message.

Microsoft Access			×
Run-time error '2302':			
AdriaMed Trawl Information Syste selected.	em can't save	the output da	ta to the file you've
* The file may be open. If so, close it, ar * If you are using a template, check to n * If the file isn't open, check to make su	nd then save the nake sure the ten ire that you have	output data to th nplate exists. enough free dish	ne file again. « space.
Debug	Continue	<u> </u>	J

7.6.1 Indexes Calculation

ATrIS estimate the abundance/biomass indexes using the formula reported by Cochran, 1977, modified by Souplet 1996.

Abundance indices

The calculations of abundance indices based on density (Number/kg of individuals per surface) are hereunder reported:

- A total surface of the area
- N number of strata in that area
- A_i surface of the stratum i
- W_i relative weight of the stratum i in the area
- n_i number of hauls in the stratum i
- A_{i,i} surface trawled by the haul j in the stratum i
- f₁ sampling fraction in the stratum i
- x_{i,j} measured value in the haul j

with
$$W_i = \frac{A_i}{A}$$
 and $f_i = \frac{\sum_{j=1}^{n_i} A_{i,j}}{A_i}$

It is possible to choose between two options. The first one is to calculate a value by surface unit for each haul and to average those values over all the hauls made in the stratum:

$$\mathbf{y}_{i,j} = \frac{\mathbf{x}_{i,j}}{\mathbf{A}_{i,j}}$$
 et $\overline{\mathbf{y}}_{i,j} = \frac{\sum_{j=1}^{n_i} \mathbf{y}_{i,j}}{n_i}$

mean value of x by unit of surface in the stratum i :

Variance of the value in the stratum i :

Variance of the estimate of the mean :

Abundance index in the area :

Variance of that index:



CPUE indices

The formulae based on CPUE (weight or number per hour trawling) are very similar to those based on density. The calculation of area indices always uses a weighted average of indices by stratum, using the ratio stratum surface/area surface as weighting factor (Souplet, 1996).

- A total surface of the area
- N number of strata in that area
- A_i surface of the stratum i
- W_i relative weight of the stratum i in the area
- n_i number of hauls in the stratum i
- $T_{i,j}$ time trawled during the haul j in the stratum i
- f_i sampling fraction in the stratum i
- $x_{i,j}$ measured value in the haul j

with
$$W_i = \frac{A_i}{A}$$
 and $f_i = \frac{\sum_{j=1}^{n_i} A_{i,j}}{A_i}$

mean value of x by unit of surface in the stratum i:

Variance of the value in the stratum i:

Variance of the estimate of the mean:

Abundance index in the area:

Variance of that index:



7.7 Multiplex Indexes Analysis

This option permits to calculate indexes of two or more species simultaneously with a wide combination of options or for a single species to calculate the indexes of fraction of the population with different characteristics.



Clicking on MULTIPLEX INDEX ANALYSIS button the following mask will be opened.

MULTIPLE INDEX ANALI	SYS		- 20					
PECIES: MULLBAR +	Mullus barba	atus	-		SPECIES	MIN L MAX L	SEX MAT L-V	V REL MAT COM
	sex			ADD	MERLMER	400 10000 200 400 0 200	N	N N
USE L-W REL.	ONV. RULE	S		REMOVE				
INDEX: ABUNDANC	E INDEX (nur	n/Km2)	•		LATE XES	MAP INDEX	ES	EXPORT TO EXCEL
SURVEY	UNIT	H NUM.	LATITUDE (Deg)	LONGITUDE (Deg)	MEAN DEPTH	(m)MERLMER (0- 200)	MERLMER (200-400)	MERLMER (400-10000)
ADRIAMED_2001	HBV	1	45.009833	13.492500	55.4	0	61.35	0 1
ADRIAMED_2001	HRV	2	44.785500	13.737500	60.4	41.54	415.37	0 5
ADRIAMED_2001	HRV	3	44.808500	14.201833	72.4	261.01	1618.24	0 1
ADRIAMED_2001	HRV	4	45.125167	14.423333	93.3	321.45	796.65	13.98
ADRIAMED_2001	HRV	6	44.119333	14.757833	93.1	-1	-1	-1
ADRIAMED_2001	HRV	7	44.792667	14.568333	124.5	1150.9	596.76	14.21
ADRIAMED_2001	HRV	8	44.174333	15.089000	73.2	127.88	809.89	0 .
ADRIAMED_2001	HRV	9	43.791500	15.451333	129.0	0	0	0
ADRIAMED_2001	HRV	10	43.885333	15.053667	110.7	-1	-1	-1
ADRIAMED_2001	HBV	11	43.551000	15.502667	300.0	-1	-1	-1
ADRIAMED_2001	HBV	12	43.470333	15.701500	259.5	990.1	206.27	0
	HBV	13	43.469500	15.917000	201.0	1371.86	642.15	14.59
ADRIAMED_2001	1 1111							
ADRIAMED_2001 ADRIAMED_2001	HBV	14	43.221667	16.285833	120.3	2853.7	2974.28	0 5

- 1) Select the species to be analysed.
- 2) Select the minimum and maximum length (if applicable)
- 3) Select a sex (if applicable)
- 4) Select the maturity (if applicable)
- 5) Click on ADD and the species name with the selected characteristics will be displayed in the right box. Repeat the step 1-5 as necessary. Please note that the selection can be repeated for the same species with different characteristics (e. g. *Merluccius merluccius* from 0-200mm, 200-400mm, >400mm).Please note that a maximum of 10 species can be selected.
- 6) If weight data are not available for the selected species the USE LENGTH WEIGTH RELATIONSHIP option can be checked

- 7) If the maturity scale used is different for the selected species (e.g. for two surveys a different maturity scale has bee used) check on USE MATURITY SCALE CONVERSION RULES option.
- 8) Select the type of indexes to be calculated.
- 9) Clicking on CALCULATE INDEXEX the data will be showed in the mask below.
- 10) Clicking on MAP INDEXES a map will be generated. The map displays calculated indexes as pie proportional to the total indexes value and divided in % according to the chosen characteristics.



7. 8 Map of Indexes /Set Up Legend

The option to map the data, using the GIS tool, is activated when a species or category is selected. The procedure to map data is the following:

- 1) Click on SET UP LEGENDS
- 2) Click on MAP INDEXES

SET UP LEGENDS

LEGEND'S VALUE SETUP		E LEGEND'S VALUE SETUP	×
LEGEND'S VALUE: .001 10 10 100 100 2000 > 2000 -	© num/km2 O num/h O Kg/km2 O Kg/h MIN MAX	LEGEND'S VALUE:	C num/km2 C num/h C Kg/km2 C Kg/h MIN MAX 001 1 UPDATE DELETE

The above window will be opened. For each index fix a range and then click on UPDATE. To modify the interval select the range to be deleted and click on DELETE

MAP INDEXES

Once the legend is configured the button MAP INDEXES can be clicked. A window will be opened: choose the indexes and click on OK.



Automatically ArcView will be opened and the selected data will be visualized on a map (for more details see para 7.8.1).



7.9 Some basic feature of ArcView

The GIS component of ATrIS has been designed to:

--Support to the data entry procedures when geographic elaboration are needed (e.g. start and end point calculation to estimate the haul length);

--facilitate the data retrieval for a given station (haul) by selecting the station on the map directly (query by location option);

--associate the sampling station to a stratum defined by the user on the basis of the available cartography

--generate thematic map in which to represent the spatial distribution of the calculated indexes

--analyze in a spatial analysis mode the calculated indexes in order to obtain a preliminary estimate of the spatial distribution of a species

--generate reports with the data and the selected area.

These options are available by using a series of buttons and tools added to the Standard Menu and the Tools Bar of ATrIS, and in the ATrIS Menu added to the Standard Menu of ArcView.

Here is a summary of each GIS option.

7.9.1 Read a map: the legend

Some basic features to read a map are given. The map shows the calculated indexes. The legend on the left side explains the symbols and the colors used. Here are some basic tools to view the map.



7.9.2 Useful buttons on ArcView

ZOOM IN and OUT

With the ZOOM IN and ZOOM OUT button \bigcirc in the toolbar, an area can be enlarged by placing the cursor near the place of interest and dragging it till the area of interest is selected.

PAN

To move the map without modifying it click on the PAN button [1] and move the cursor to move the map.

GLASSES

The GLASSES button **dot** allows to visualize data corresponding to a certain haul. Click on the GLASSES button and select a particular haul. Automatically the system will display the

Access table with the haul data corresponding to the haul selected. Click on CLOSE and ArcView will be showed again.

ACCESS KEY

The ACCESS KEY button is a shortcut to Access: to go back to ATrIS click on this button and the application on Access will be displayed again.

FULL EXTENT

To go back to the principal theme, after some zooming and panning, click on the FULL EXTENT button or go via menu bar to View/Full Extent and the complete theme will be showed again.

7.9.3 Query by location (glasses)

This option can be used during data entry or data retrieval and it allows the users to select one of the hauls mapped and obtain the corresponding data table. This option is activated when the map point is activated in the table of contents of ArcView (TOC) in the lefts hand side of the screen. To visualize the map just click on the name until the theme appears embossed.

7.9.4 Use GIS tool to define strata

This option has been explained in Chapter 7 para 7.1.4.

7.9.5 Use GIS tool to generate thematic maps

This option allow the user to generate map with the calculated indexes in ATrIS. This option can be used also to map data for more than one survey (see Chapter 6, para 6.3.4.1 for generation of hauls map, para 6.1.1 for generation of map of hauls in a survey; Chapter 7, para 7.1.4 for using GIS tool to define strata and para 7.7 to generate map of multiple indexes).

7.9.6 Calculate the distribution area of a species

This option is due to two data interpolation techniques in order to estimate the distribution area of a certain species or a population fraction of that species. The techniques are the interpolation method to calculate the Thiessen (Voronoi) polygons and the generation of cells.

7.9.6.1 Generate Thiessen (Voronoi) polygons

This option is included in the ATrIS menu created in ArcView and it is only activated when a thematic map has been generated for an index for a species.



With this technique to each unknown point the value of the nearest known point is associated. With this approximation near a known points several polygons are calculated (the Thiessen polygons) which enclose the nearest space to the known point. To this space the indexes calculated for the known point are associated.

Select the GENERATE THIESSEN (VORONOI) POLYGONS from the ATrIS Menu and a mask will be shown.

The Thiessen polygons are represented with the same scale used to generate the point map (from which the polygon were generated). They may be generated:

-Using each geographical unit separately

-Using all the geographical units together

-Using a series of points selected by the users (>3)



Select the method and ATrIS will generate the corresponding map.

Please use this utility for data of a single survey has been selected. If the utility is used for two or more data surveys the resulted points may generate clusters which make the creation of Thiessen polygons difficult. (See next para for more data surveys)



7.9.6.2 Generate cells

The second option to calculate the distribution area of a species is to divide a selected area in a matrix with n rows/m columns of rectangular elements (cells) whose dimension are determined by the user. The number of points falling in a cell, the minimum, the maximum, the mean value, the variance and the standard deviation value of the index, for each cell, are then calculated. The calculated cells will be represented with the same scale used to represent points estimated with the estimated mean values.

The rectangular elements which form this matrix (cells) and the extension of the matrix could be defined by the users using the option "Generate cells" given in the Menu bar ATrIS, or, alternatively, with the button matrix near the GLASSES button, drawing a rectangular.

--GENERATE CELLS from the ATrIS Menu Bar



A mask will be shown.

Min. Lat.: 40 *	10	Max. Lat.	42 *	10 '
Min. Lon.: 16 *	10	Max. Lon.:	19 *	40 '
Cell Size Y (min.):		5 Rows	: 	24
Cell Size \times (min.):		5 Col	:	42
Land theme:	none			-

The user should define the external borders of the matrix which he/she wishes to generate (Minimum and maximum Latitude, and Minimum and Maximum Longitude)

Then the dimension of cell (height and width) expressed in minutes (sixtieth of a degree).

ATrIS will calculate the number of cells for each row and column automatically.

If the cell dimension has been changed, the row and column number will be the same but the maximum longitude and the maximum latitude will be recalculated.

-- GENERATE CELLS from the MATRIX Button

In this case the boundary of the matrix are those defined for the rectangular drawn by the user. \blacksquare

To calculate the indexes for the points which fall in the defined cells select from the ATrIS Menu "SUMMARIZE INDEX USING CELLS".



The calculation of the minimum, maximum, mean value, variance and standard deviation and the number of the points in the defined area will start.

Please use this utility for data of two or more surveys: it encompass the problem of cluster formation and gives a view of the mean values for each cell using all the surveys.

Please also note that the cell generation may be a long operation if cell values higher than 50 rows/column are selected.



7.9.7 Print reports

The option PRINT THE MAP in the ATrIS menu allow the user to print a report with the map generated in a format with all the data:

A legend of the data

The scale used

The projection used

The cartographic datum

The geographic graticule

The reference to the cartography used



The area represented in the report will be the area zoomed by the user before launch the print option.



8 Consistency Control

This panel is complementary and supporting all the data validation measures used in the other panels (see chapter 5, 6 and 7). Once the data are inserted the system will check on the consistency of data: it allows to check data *a posteriori* in order to improve data quality. The control can be carried out on a specific survey/unit and it is possible to specify a species. The consistency control, in particular the possibility to show biological data, permits the user to have (print or export) the list of all the specimens with biological data.

)ATA INPUT AND RETRIEVAL DATA ANALYSIS IMPORT/EX	(PORT DATA DATA CONFIGURATION CONSISTENCY CONTROL
SURVEY:	VERIFY CONS. CATCH/BIOLOGIC AL DATA SHOW BIOLGICAL DATA
UNIT:	
SPECIES:	VALIDATION SCALES CHECK
DATA TYPE:	SHOW MODIFIED
DATE2:	

Many of the data check controls were developed and are included in the DATA CONFIGURATION panel (see Chapter 5) and help the user to insert data correctly. Data can be further checked for consistency after data entry or if the Administrator has changed some rules, with the options given in the CONSISTENCY CONTROL panel. The following procedures should be carried out to check data:

- 1) Choose a survey
- 2) Choose a unit. The button SHOW BIOLOGICAL DATA, MATURITY SCALES CHECK, VERIFY CONSISTENCY CATCH/BIOLOGICAL DATA and HAULS LENGTH VALIDATION will be activated.
- 3) Select a species (if applicable).
- 4) Select a class size and/or a sex (if applicable). The buttons LENGTH FREQUENCY DISTRIBUTION, LENGTH WEIGHT RELATIONSHIP and LENGTH MATURITY RELATIONSHIP.

To visualize all the information related to the modification of a record:

- 1) Select a data type in which perform the query
- 2) Define the range of date in which limit the search
- 3) click on SHOW MODIFIED RECORDS

Hereunder the main factors which may have consequences on the error generation are detailed:

- 1. Completeness;
- 2. Consistency;
- 3. Congruence.

8.1 Completeness

ATrIS provides two options to check data completeness:

- --Verification of consistency between catch data and biological data
- --List of all the biological data

8.1.1 Verify consistency between catch and biological data

To rapidly verify consistency between catch data and biological data press the button VERIFY CONS.CATCH/BIOLOGIC. DATA. The following mask will be displayed showing for the survey and unit chosen, the list of biological data for each haul. The table can underline the stations in which for a species the number of individuals given in the biological data table does not coincide with the number given in the catch data table. Furthermore, in the case of the target species, this option may underline stations in which there are no biological data available for that species.

-8	VERIFY CONSISTEN	icy between c	ATCH ANI) BIOLOGICAL	DATA	-	. 🗆 🗙
	SURVEY	UNIT	HAUL	SPECIES	CATCH NUM.	B. D. SP.	
•	ADRIAMED_2001	ALBANIA	3	NEPRNOR	20	3	
	ADRIAMED_2001	ALBANIA	5	MERLMER	51	49	
	ADRIAMED_2001	ALBANIA	10	MULLBAR	55	33	
	ADRIAMED_2001	ALBANIA	12	MERLMER	76	75	
	ADRIAMED_2001	ALBANIA	22	MERLMER	19	18	
	ADRIAMED_2001	ALBANIA	24	MERLMER	90	46	
	ADRIAMED_2001	ALBANIA	34	MERLMER	24	21	
	ADRIAMED_2001	ALBANIA	40	MERLMER	5	2	1000
				EX	PORT TO EXCEL	CLOSE	
Rei	cord: 🚺 🔳	1	► N I I	f 8			1

8.1.2 Show biological data

Attraverso la seconda funzionalità è possibile consultare tutte le informazioni inserite nella tabella relativa ai dati biologici, e di conseguenza verificare quali specie sono state inserite e quali invece sono ancora mancanti. E' possibile effettuare il controllo specie per specie selezionando una specie nell'apposita casella combinata (Combobox "Species").

This button shows all the biological data included for the survey and unit selected. This option allows the users to check which species are inserted and which are missing.

E	BIOLOGIC/	L DATA								- 🗆 ×
Γ	HAUL	SPECIES	NUM W. (g)	LEN. (mm) SEX	MAT. M	ATURITY SCALE	NOTES	MODIFIED	MOD_BY	ID 📥
	89	MERLMER 💌	1 -1	85 N -				20/01/05 12.10.03	ADMIN	10275
ſ	139	MERLMER 💌	22 -1	85 N 💌		-		20/01/05 12.10.03	ADMIN	10615
ľ	110	MERLMER •	2 -1	85 N 🗸		-		20/01/05 12.10.03	ADMIN	10448
ľ	88	MERLMER 💽	1 -1	85 N 💌		-		20/01/05 12.10.03	ADMIN	10236
ľ	90	MERLMER -	5 -1	85 N 💌		•		20/01/05 12.10.03	ADMIN	10302
ľ	111	MERLMER	1 -1	85 N 💌		•		20/01/05 12.10.03	ADMIN	10459
ľ	104	MERLMER -	3 -1	85 N 💌		•		20/01/05 12.10.03	ADMIN	10409
ľ	79	MERLMER 💽	2 .1	85 N 💌		•		20/01/05 12.10.03	ADMIN	10191
ľ	126	MERLMER 💽	3 -1	90 N 💌		•		20/01/05 12.10.03	ADMIN	10533
ľ	118	MERLMER 💌	1 -1	90 N 💌		•		20/01/05 12.10.03	ADMIN	10497
Ī	117	MERLMER 💽	2 .1	J N 🗸		•		20/01/05 12.10.03	ADMIN	10477
ľ	TOT:	973 M:	161 F: 2	20 1: 0	N: 592	EX	PORT TO EXCEL	CLOSE		
	Record: 🚺 🖣	23 🕨	▶1 ▶* of 497	•						Ŀ /

For a single species select for a species name in the combo box SPECIES. Please note that the data visualized cannot be modified, they are read only.

CONTROL PAN	EL (Unregiste	red)					
Quit ATrIS Set	Up Reference F	ïles					
DATA INPUT AND R	ETRIEVAL D	ATA ANALYSIS IMPORT/EX	PORT DATA	DATA CONFIGU	RATION	CONSISTENCY CONTI	ROL
SURVEY:	ADRIAMED_	2001	VERI CATCH/	FY CONS. BIOLOGICAL DATA	SH	IOW BIOLGICAL DATA	
UNIT:	ALBANIA	•	HAUL	S LENGTH	ма	TURITY SCALES	
SPECIES:		*	VAL	IDATION	1	CHECK	-
	ABRAVER ABRRALB ACANEXI ACANPEL	Abralia veranyi Abra alba Acantephyra eximia Acantheohyra pelagica					
CLASS SIZE(m	ACATPAL AEQUOPE ALCYPAL ALEPROS	Acantholabrus palloni Acquipecten opercularis Alcyonium palmatum Alepocephalus rostratus	•	LENGTH-WE RELATIONS	IGHT SHIP	LENGTH-MATU RELATIONSH	RITY

8.2 Consistency

This option has been developed to guarantee the logical consistency of data. This can be achieved when:

--inserted data follow the rules given by the Administrator

--data are significant for the described phenomenon.

8.2.1 Maturity scales check

To check if the inserted data follow the rules given by the Administrator the option MATURITY SCALES CHECK can be used. In this case the data should follow the rules given by a certain maturity scale and the maximum value indicated by the same scale. --Select a species

--Click on MATURITY SCALES CHECK

--The list of all the specimens for the species selected will be given.

	ATURIT	Y SCALES CHE	CK	2							_ 🗆 ×
	HAUL	SPECIES	2	SE	х	MAT.	MATURITY SCALE		MODIFIED	MOD_BY	
	9	MICMPOU	-	М	-	1	MEDITS fishes	-			· · · · · · · · · · · · · · · · · · ·
	9	MICMPOU	-	М	•	1	MEDITS fishes	-			
	9	MICMPOU	-	М	•	1	MEDITS fishes	-			
	9	MICMPOU	-	М	+	1	MEDITS fishes	-			
	9	MICMPOU	-	М	4	1	MEDITS fishes	-			
	9	MICMPOU	-	М	•	1	MEDITS fishes	-			
2	9	MICMPOU	-	М	•	1	MEDITS fishes	-			
100	9	MICMPOU	-	М	•	1	MEDITS fishes	-			
	9	MICMPOU	-	М	4	2	MEDITS fishes	-			9
	9	MICMPOU	-	М	•	2	MEDITS fishes	-			
	9	MICMPOU	-	М	-	2	MEDITS fishes	-			
	9	MICMPOU	-	М	٠	2	MEDITS fishes	-			
	9	MICMPOU	-	М	4	2	MEDITS fishes	-			
	9	MICMPOU	-	М	+	2	MEDITS fishes	-			
2	9	MICMPOU	-	М	•	2	MEDITS fishes	-			
10	9	MICMPOU	-	М	4	2	MEDITS fishes	-			
Rec	ord: 14	1 2	•)	*	of 40			EXPORT T EXCEL	0 CLOSE	

8.2.2 Length frequency distribution

When choosing a class size or a sex the control can be refined on the species selected. The LENGTH FREQUENCY DISTRIBUTION button displays the data in a length frequency table and a length frequency graph. The table shows the number of individuals included in a given length class and the value of the length interval set during data configuration (see Chapter 4). In particular the chart facilitates the visualization of specimens in anomalous length classes.

📾 TAB	BLES AND GRAPHS	į.			a non support of		All and the second s	×
SUR	IVEY: ADRIAMED_	2001	UNIT: ALBANIA		SPECIES:	MERLMER	CLASS SIZE(mm): 200	SEX:
	recover ou coul		1					
LEN./I	FREQ.(TABLE) LEN./	FREQ.(GRAPH)						
								1.1
	SUBVEY	UNIT	SPECIES CLASS	Num	L/II Limits			-
	ADRIAMED 2001	ALBANIA	MERLMER 0	847	**			
	ADRIAMED 2001	ALBANIA	MERLMER 200	69				
	ADRIAMED_2001	ALBANIA	MERLMER 400	2				
	ADRIAMED 2001	ALBANIA	MERLMER 600	2				
								-
Reco	ard: 14 🖂 🗌	1	of 4					
1.000		• [
			- 1			1		
SH	IOW REPORT	EXPORT I	0		CLOSE			
1	Contractor and Story	EXCEL]		



In particular the chart facilitates the visualization of specimens in anomalous length classes.

8.3 Congruence

To estimate the congruence two options have been developed in ATrIS:

--Hauls Length Validation

--Length Weight Relationships

8.3.1 Hauls length validation

Data on haul length is important in the estimation of indexes. Haul length validation is carried out comparing the haul length recorded with the theoretical haul length estimated as the time of haul duration multiplied the mean speed (SAMED Project, see also Chapter 6, para 6.3.4.3). If click on HAULS LENGTH VALIDATION button the following table will be shown. A summary of the information on the haul is given, showing the Haul Length calculated (H.LEN (m)), the theoretic length (TEOR.LEN(m)), the speed (SPEED (Km)) and the duration (DUR.(min)).

SURVEY	UNIT	HAUL N.	H. LEN.(m)	EOR. LEN.(m)	SPEED(kn)	DUR.(min)	
ADRIAMED_2001	HBV		1630	1630	3.3	16	
ADRIAMED_2001	HRV	2	4815	4815	3.9	40	
ADRIAMED_2001	HRV	3	5/4/	5/4/	3.8	49	
ADRIAMED_2001	HRV	4	7155	7155	3.8	61	
ADRIAMED_2001	HRV	6	6852	6852	3.7	60	
ADRIAMED_2001	HRV	/	7038	7038	3.8	60	
ADRIAMED_2001	HRV	8	7038	7038	3.8	60	
ADRIAMED_2001	HRV	9	7038	7038	3.8	60	
ADRIAMED_2001	HRV	10	6686	6686	3.8	57	
ADRIAMED_2001	HRV	11	7272	7272	3.8	62	
ADRIAMED_2001	HRV	12	7272	7272	3.8	62	
ADRIAMED_2001	HRV	13	6852	6852	3.7	60	
ADRIAMED_2001	HBV	14	7464	7464	3.9	62	
ADRIAMED_2001	HRV	15	6281	6281	3.7	55	
ADRIAMED_2001	HRV	20	7038	7038	3.8	60	
ADRIAMED_2001	HRV	21	6803	6803	3.8	58	
ADRIAMED_2001	HRV	22	457	457	3.7	4	



The points should appear near the bisector of the first quadrant. The point position will coincide with the bisector just when the haul length recorded was calculated using the Speed and Duration method. When the position of a point is distant from the bisector the following elements should be analyzed if the haul length was calculated using the "Start point and end point algorithm" (see Chapter 6, para 6.3.4.3)

--if the haul length recorded is lower than the theoretical haul length, maybe the haul was not linear: in this case, probably the theoretical haul length value is more exact than the recorded one.

-- if the haul length recorded is higher than the theoretical haul length, it should be checked if the speed during the haul has been regular and the start time and end time were registered in a correct way.

In any case the user should evaluate case by case when the haul length recorded is not similar to the theoretical value.

8.3.2 Length weight relationship

τA	VEIGHT REL. (TABLE)	.en./weight	REL. (GRAP	H)]				
	SURVEY	UNIT	HAUL N.	SPECIES	LEN.(mm)	W. (a)		
T	ADRIAMED 2001	ALB	ALB	MERLMER	1	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	20	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	75	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	85	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	95	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	100	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	100	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	100	0		
T	ADRIAMED_2001	ALB	ALB	MERLMER	100	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	100	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	100	0		
T	ADRIAMED_2001	ALB	ALB	MERLMER	100	0		
T	ADRIAMED_2001	ALB	ALB	MERLMER	100	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	105	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	105	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	105	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	105	0		
t	ADRIAMED_2001	ALB	ALB	MERLMER	105	0		
T	ADRIAMED_2001	ALB	ALB	MERLMER	105	0		
t	ADRIAMED 2001	ALB	ALB	MERLMER	105	0		
eci	ord: 🚺	1 > >>	of 253					
-	100		-				1	

With this option a table summarizing the length-weight data for each individual or group of individuals is generated.

If weight data are not included the value charted is equal to 0. This option allows the users to check for individuals with length-weight data which diverge with the length-weight relationships given for that species in the literature.



8.3.3 Length/Sexual maturity relationships

Clicking on LENGTH/MATURITY RELATIONSIPS a table is generated with the data on sex, length and maturity stages for each individual. The graph is also useful, for example, to identify individuals with length lower than the length at fist maturity related with maturity stages not congruent with it.

UR	VEY: ADRIAMED_2	:001	UNIT:	CROATIA		S	PECIES:	MERLMER	CLASS SIZE(mm): 200	SEX:
1.71	MATURITY REL. (TABL	E) LEN./MA	TURITY RE	L. (GRAPH)						
	SURVEY	UNIT	HAUL N.	SPECIES	SEX	LEN.(mm)	MAT.			
Г	ADRIAMED_2001	HRV	13	MERLMER	м	95	1			
	ADRIAMED_2001	HRV	13	MERLMER	м	100	1			
	ADRIAMED_2001	HRV	13	MERLMER	м	110	1			
	ADRIAMED_2001	HRV	13	MERLMER	м	115	1			
	ADRIAMED_2001	HRV	13	MERLMER	м	130	1			
	ADRIAMED_2001	HRV	20	MERLMER	м	130	1			
Г	ADRIAMED_2001	HRV	13	MERLMER	м	135	1			
	ADRIAMED_2001	HRV	20	MERLMER	м	140	1			
	ADRIAMED_2001	HRV	13	MERLMER	м	140	1			
	ADRIAMED_2001	HRV	7	MERLMER	м	140	1	1		
T	ADRIAMED_2001	HRV	13	MERLMER	м	145	1			
	ADRIAMED_2001	HRV	20	MERLMER	м	145	1			
	ADRIAMED_2001	HRV	14	MERLMER	м	145	1			
	ADRIAMED_2001	HRV	7	MERLMER	м	145	1			
Γ	ADRIAMED_2001	HRV	20	MERLMER	м	150	1			
Γ	ADRIAMED_2001	HRV	14	MERLMER	м	150	1			
T	ADRIAMED_2001	HBV	13	MERLMER	м	150	1			
	ADRIAMED_2001	HRV	21	MERLMER	м	150	1	1		
	ADRIAMED_2001	HRV	7	MERLMER	м	150	1			
ecc	rd: 14 🕣	1	* of 203							
	and a second second	EXPORT	то				11-1-1			
SH	OW REPORT	EXCE				CL	OSE			
	and the second second	EXPORT	то			1	11-1			



8.4 Account management

One powerful tool of the ATrIS Consistency control is the account management with the possibility to archive all the modifications performed in the system, the person responsible for the modification and the date of the modification.

DATA TYPE:	HAULS DATA	í
DATE1:	HAULS DATA CATCHES DATA BIOLOGICAL DATA	SHOW MODIFIED RECORDS
DATE2:	SETUP TABLES	

If click on the button SHOW MODIFIED RECORDS a list of all the modification will be generated.

	SURVEY	COUNTRY	HAUL	MODIFIED ON	MODIFIED BY	REC. ID
Г	ADRIAMED_2001	ALB	3	07/02/05 13.18.36	ADMINNICO	1
	ADRIAMED_2004	SLO	1	24/01/05 18.29.50	ADMIN	194
	ADRIAMED_2004	SLO	2	24/01/05 18.29.47	ADMIN	195
	MEDITS_2004	ALB	1	19/01/05 16.12.32	ADMIN	344
	MEDITS_2004	ALB	2	19/01/05 16.12.32	ADMIN	345
	MEDITS_2004	ALB	4	19/01/05 16.12.32	ADMIN	346
	MEDITS_2004	ALB	6	19/01/05 16.12.32	ADMIN	347
	MEDITS_2004	ALB	7	19/01/05 16.12.32	ADMIN	348
	MEDITS_2004	ALB	8	19/01/05 16.12.32	ADMIN	349
	MEDITS_2004	ALB	10	19/01/05 16.12.32	ADMIN	350
	MEDITS_2004	ALB	11	19/01/05 16.12.32	ADMIN	351
	MEDITS_2004	ALB	12	19/01/05 16.12.32	ADMIN	352
	MEDITS_2004	ALB	13	19/01/05 16.12.32	ADMIN	353
	MEDITS_2004	ALB	14	19/01/05 16.12.32	ADMIN	354
	MEDITS_2004	ALB	15	19/01/05 16.12.32	ADMIN	355
	MEDITS_2004	ALB	16	19/01/05 16.12.32	ADMIN	356
	MEDITS_2004	ALB	17	19/01/05 16.12.32	ADMIN	357
	MEDITS_2004	ALB	19	19/01/05 16.12.32	ADMIN	358
	MEDITS_2004	ALB	21	19/01/05 16.12.32	ADMIN	359
	MEDITS_2004	ALB	22	19/01/05 16.12.32	ADMIN	360
	MEDITS_2004	ALB	23	19/01/05 16.12.32	ADMIN	361
	MEDITS_2004	ALB	24	19/01/05 16.12.32	ADMIN	362
	MEDITS_2004	ALB	25	19/01/05 16.12.32	ADMIN	363
	MEDITS_2004	ALB	26	19/01/05 16.12.32	ADMIN	364
	MEDITS_2004	ALB	27	19/01/05 16.12.32	ADMIN	365

This kind of information together with the date is always printed on the report generated by ATrIS. In this way it is possible to check the data bank modification and to verify the congruence between a modification and the databank up-date status.

9. References

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- Sparre, P., Venema, S.C. (1998) Introduction to tropical fish stock assessment. Part 1. Manual. FAO Fisheries Technical Paper. No. 306.1, Rev. 2. Rome, FAO. 1998. 407p.
- SAMED. (2002) Stock assessment in the Mediterranean. European Commission–DG XIV, Project 99/047 – Draft Final Report.

Annex A -- Report formats

The following are representations of the reports that can be generated from ATRIS.

(F	9	RI	SCIE ESPOI	NTII VSIBI	ADRIA NC COOPERA E FISHERIE:	MED ATION (S IN TH	TO SUF E ADRI	PPORT LATIC SEA	
	SURVEY				UNIT		F	IAUL	DATE
AD	RIAMED	2001			ALBANIA			34	06/11/2001
MERL	MER	(Merlı	iccius	me rlı	iccius)				
N. SPEC.	LEN.(mm)	W. (g)	SEX	MAT	M	AT. SCA	E	INSERT BY	ON
1	200	-1	М	1	MEDITS fishe	S			
1	220	-1	м	1	MEDITS fishe	S		ADMIN	05/04/2005 22.07.33
1	234	-1	F	3	MEDITS fishe	S		ADMIN	29/11/2004 21.35.13
1	115	-1	I					ADMIN	05/04/2005 22.07.38
1	120	-1	Т	_	NOTE: PROVABIL		0 9222		10
5	125	-1	I					ADMIN	29/11/2004 23.08.42
4	135	-1	I						
4	140	-1	I						
1	344	-1	I		NOTE			ADMIN	29/11/2004 21.36.15
2	130	-1	N					ADMIN	29/11/2004 21.36.37
N. TOT.	21	M	2		F 1	1	16	N 2	
NEPR	NOR	(Nephi	rops n	orveg	icus)				
N. SPEC.	LEN.(mm)	W. (g)	SEX	MAT	M	AT. SCA	E	INSERT BY	ON
1	12	-1	М		NOTE			ADMIN	06/04/2005 19.23.17
1	14	-1	м					ADMIN	06/04/2005 19.24.05
3	20	-1	F	3	MEDITS Neph	nrops fen	nale	ADMIN	09/05/2005 11.29.34

				RE	A SCIENTIFIC (SPONSIBLE F.	DRIAN COOPERA ISHERIE:	AED Ation to su S in the add	PPOR LATIC	T C SEA				Ę	-
SURVEY: ADRI	AMED_2002		UNI	T: CRO	ATIA			NU	MBER	HAULS A	VAIL.: 9 FACE (km2):	TO T. NUM	L: 9	
21116, 21117, 2111	8, 21119							WE	IGHT	HAULSA	VAIL: 9	TO T. NUM		
								200		TOT. SUR	FACE (km2):	31	727	
ELECTION PARAM	TERS LEN	L INT.:		T	CLASS SIZE		SEX:	MAT		LW REL:	MAT	SCALE CO	NV.:	
			892	212								CONLL O		
		DED	TH(m)					DED	(Lián)					
SURVEY	SPECIES	MIN	MAX	NKm2	STDEV-CV	N/h	ST DEV-C V	MIN	MAX	Ka/Km2	ST DEV-C V	Kalh	ST DEV -C V	
ADRIAMED 2002	LOPHBUD	10	500	14.19	4.09 - 28.80	1.00	0.29 - 29.31	10	500	6.87	4.88 - 70.98	.49	0.35 - 72.01	
ADRIAMED_2002	GOBINIG	10	500	721.66	643.02 - 89.10	50.80	45.25 - 89.09	10	500	10.21	9.00 - 88.11	.72	0.63 - 88.09	
ADRIAMED_2002	GOBIQUA	10	500	52.75	36.42 - 69.04	3.74	2.62 - 70.05	10	500	.41	0.21 - 52.13	.03	0.02 - 52.74	
ADRIAMED_2002	HE LID AC	10	500	30.27	0.00 - 0.00	2.13	0.00 - 0.00	10	500	.28	0.00 - 0.00	.02	0.00 - 0.00	
DRIAMED_2002	ILLECOI	10	500	249.85	95.93 - 38.39	17.67	6.76 - 38.25	10	500	13.08	2.61 - 19.95	.92	0.18 - 19.99	
ADRIAMED_2002	LEPICAU	10	500	82.46	0.00 - 0.00	5.80	0.00 - 0.00	10	500	18.03	0.00 - 0.00	1.27	0.00 - 0.00	
ADRIAMED_2002	LEPMBOS	10	500	16.70	0.00 - 0.00	1.18	0.00 - 0.00	10	500	.69	0.00 - 0.00	.05	0.00 - 0.00	
ADRIAMED_2002	LEPMWHS	10	500	19.84	0.00 - 0.00	1.40	0.00 - 0.00	10	500	1.31	0.00 - 0.00	.09	0.00 - 0.00	
ADRIAMED_2002	PAGEACA	10	500	3.92	1.69 - 42.99	.28	0.12 - 42.99	10	500	.17	0.07 - 40.31	.01	0.00 - 40.31	
ADRIAMED_2002	LOLIVUL	10	500	140.32	60.05 - 42.79	9.90	4.22 - 42.59	10	500	13.30	4.49 - 33.79	.94	0.32 - 33.62	
ADRIAMED_2002	GADIARG	10	500	50.11	0.00 - 0.00	3.53	0.00 - 0.00	10	500	.21	0.00 - 0.00	.01	0.00 - 0.00	
ADRIAMED_2002	MACOSCO	10	500	5.22	0.00 - 0.00	.37	0.00 - 0.00	10	500	.04	0.00 - 0.00	.00	0.00 - 0.00	
ADRIAMED_2002	MAJASQU	10	500	6.87	4.88 - 71.04	.48	0.34 - 70.89	10	500	4.79	3.64 - 75.99	.34	0.26 - 75.85	
ADRIAMED_2002	MERLMER	10	500	2064.97	465.20 - 22.53	145.84	33.61 - 23.04	10	500	139.80	36.63 - 26.20	9.87	2.64 - 26.72	
ADRIAMED_2002	MICMPOU	10	500	21.92	0.00 - 0.00	1.54	0.00 - 0.00	10	500	2.44	0.00 - 0.00	.17	0.00 - 0.00	
ADRIAMED_2002	MULLBAR	10	500	1156.90	547.05 - 47.29	81.76	38.33 - 46.88	10	500	41.30	20.15 - 48.79	2.92	1.41 - 48.24	
ADRIAMED_2002	MULLSUR	10	500	11.04	7.54 - 68.24	.78	0.53 - 67.62	10	500	.84	0.40 - 47.56	.06	0.03 - 47.32	
ADRIAMED_2002	MUSTMUS	10	500	8.47	5.43 - 64.10	.60	0.38 - 63.96	10	500	12.70	8.14 - 64.10	.90	0.57 - 63.96	
ADRIAMED_2002	ABRAVER	10	500	126.81	55.56 - 43.81	8.97	3.91 - 43.63	10	500	9.36	8.02 - 85.73	.66	0.56 - 85.71	
ADRIAMED_2002	LEPTCAV	10	500	1512.78	866.60 - 57.29	106.66	61.03 - 57.22	10	500	31.11	22.22 - 71.44	2.19	1.56 - 71.38	
ADRIAMED_2002	DENTGIB	10	500	119.30	109.65 - 91.91	8.40	7.72 - 91.91	10	500	11.01	10.12 - 91.91	.77	0.71 - 91.91	



WEIGHT MAT.: DEPTH(m) MIN MAS 10 200	VEIGHT HAULS TOT.S II.: LAW RE PTH(m) MAX MAX 200 2948.3	S AVAIL.: SURFACE (km2): BEL: M 12 ST.DEVC.V 338 0.42 - 0.0	19 TOT. NUM.: 10070 MAT. SCALE CONV /. Kg/h ST	19 D
DEPTH(m)	PTH(m) MAX Kg/Km2 200 2948.3	SUPPACE (km2): REL: M 12 ST.DEVC.V 3.38 0.42 - 0.0	AAT. SCALE CONV	
DEPTH(m) /. MIN MA3 L 05 10 200	PTH(m) N MAX Kg/Km2 I 200 2948 .3	12 ST.DEVC.V 3.38 0.42 - 0.0	/. Kg/h ST	
/. MIN MA) 10 <mark>5 10 20</mark> 0	N MAX Kg/Km2 1 200 2948 .3	2 ST.DEVC.V 3.38 0.42 - 0.0	/. Kg/h ST	
.05 10 200	200 2346.3	0.30 0.42 - 0.0	01 207.44	.DEVC.V.
			201 207.44	0.02 - 0.01







HAULS LENGTH VALIDATION

SURVEY	UNIT	HAULN.	H.LEN.(m)	TEOR.LEN.(h)	SPEED (KI).	DUR. (m b)
ADRIA MED_2001	ALB	3	5100	5186	2.8	60
ADRIAMED_2001	ALB	5	63 55	4630	2.5	60
ADRIA MED_2001	ALB	7	55 64	50.00	2.7	60
ADRIA MED 2001	ALB	8	50.95	44.45	2.4	60
ADRIAMED 2001	ALB	10	50 50	47 53	2.8	55
ADRIA MED 2001	ALB	12	50.00	50.00	2.7	60
ADRIAMED 2001	ALB	14	45 00	4630	2.5	60
ADRIA MED 2001	ALB	16	45.00	48 15	2.6	60
ADRIA MED 2001	ALB	18	3800	37 50	2.7	45
ADRIA MED 2001	ALB	22	5100	5186	2.8	60
ADRIA MED 2001	ALB	24	1505 153	4630	2.5	60
ADRIAMED 2001	ALB	27	40.00	44.45	2.4	60
ADRIA MED 2001	ALB	30	45 00	4630	2.5	60
ADRIAMED 2001	ALB	31	47 50	48 15	2.6	60
ADRIAMED 2001	ALB	32	49 15	48 15	2.6	60
ADRIA MED 2001	ALB	34	50.00	50.00	2.7	60
ADRIAMED 2001	ALB	37	5100	5186	2.8	60
ADRIAMED 2001	ALB	40	45 00	4630	2.5	60
ADRIAMED 2001	HRV	1	16 30	1630	3.3	16
ADRIAMED 2001	HRV	2	48 15	48 15	3.9	40
ADRIA MED 2001	HRV	3	57.47	57 47	3.8	49
ADRIAMED 2001	HRV	4	7155	7155	3.8	61
ADRIAMED 2001	HRV	6	68 52	68 52	3.7	60
ADRIA MED 2001	HRV	7	7038	7038	3.8	60
ADRIAMED 2001	HRV	8	7038	7038	3.8	60
ADRIAMED 2001	HRV	9	7038	7038	3.8	60
ADRIAMED 2001	HRV	10	66 86	66 86	3.8	57
ADRIAMED 2001	HRV	11	7272	7272	3.8	62
ADRIAMED 2001	HRV	12	7272	7272	3.8	62
ADRIAMED 2001	HRV	13	68 52	68.52	3.7	60
ADRIAMED 2001	HRV	14	7464	7464	3.5	62
ADRIAMED 2001	HRV	15	6281	6281	3.7	55
ADRIAMED 2001	HRV	20	7038	7038	3.8	60
ADRIAMED 2001	HRV	21	68.03	68.03	3.8	58
ADRIAMED 2001	HRV	22	457	457	3.7	4
ADRIAMED 2001	\$LO	1	0	0	3.5	1440
ADRIG MED 2001	810		0	0	3.6	1440

20/05/20 05 10.19.46

ADMIN

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2001 /2002 TRATUM 21116 21116 /2002 TRATUM 21117 21116 21117 21116	VESSEL AND AND VESSEL AND AND	GEAR TARTA TARTA GEAR TARTA	DUR.(min) 16 40 DUR.(min)	SP.(HIT) 3.3 3.5 SP.(HIT)	LEN.(m) 1630 4815	DEPTH(m) 37 40	H.SPR.(m) 10 10	S.A (Hm2) 0.0163 0.0481
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2 11 16 2 11 16 /2002 /TRATUM 2 11 17 2 11 16 2 11 17 2 11 16 2 11 17	AND AND VESSEL AND AND	TARTA TARTA GEAR TARTA TARTA	16 40	3.3 3.9 \$P.(kn)	1630 4815	37 40	10 10	0.0163 0.0481
2 11 16 /2002 TRATUM 2 11 17 2 11 16 2 11 17	VESSEL AND AND	GEAR TARTA	40 DUR.(min)	3.9 \$P.(kn)	48 15	40	10	0.0481
2/2002 TRATUM 21117 21116 21117	VESSEL AND AND	GEAR TARTA	DUR.(min)	SP.(kn)				
21117 21116 21117	AND AND	GEAR TARTA	DUR.(min)	SP.(HD)				
2 11 16 2 11 17	AND	TARTO	L	27	LEN.(M)	DEPTH(m)	H.SPR.(m)	S.A. (Hm2)
21117	AND	I IMICIA	60	3.8	7038	49	10	0.0704
	AND	TARTA	57	3.8	6686	74	10	0.0669
12002								
TRATUM	VESSEL	GEAR	DUR.(min)	\$ P.(MIT)	LEN.(m)	DEPTH(m)	H.SPR.(m)	S.A. (Hm2)
2 11 17	AND	TARTA	60	3.8	7038	86	10	0.0704
21118	AND	TARTA	55	3.7	6281	134	10	0.0628
/2002								
TRATUM	VESSEL	GEAR	DUR.(min)	\$ P.(kn)	LEN.(m)	DEPTH(m)	H.SPR.(m)	S.A. (Hm2)
2 11 17	AND	TARTA	62	3.9	7464	80	10	0.07 46
2 11 17	AND	TARTA	60	3.8	7038	64	10	0.0704
21116	AND	TARTA	4	3.8 3.7	457	25 70	10	0.0620
/2002				100 A.				
TRATUM	VESSEL	GEAR	DUR.(min)	SP.(ND)	LEN.(m)	DEPTH(m)	H.SPR.(m)	S.A. (Hm2)
2 11 19	AND	TARTA	62	3.8	7272	200	10	0.07 27
2 11 18	AND	TARTA	62	3.8	7272	173	10	0.07 27
/2002								
TRATUM	VESSEL	GEAR	DUR.(min)	SP.(kn)	LEN.(m)	DEPTH(m)	H.SPR.(m)	8.A. (Hm2)
21116	AND	TARTA	61	3.8 3.8	7155	48	10	0.0375
2 11 17	AND	TARTA	60	3.8	7038	83	10	0.0704
1 2 3 8	21							
4675	10 14 1	15 20 22						
4 6 7 5	10 14 1	15 20 22						
4 G 7 9 12 13	10 14 1	15 20 22						
	21117 21118 21117 /2002 TRATUM 21117 21117 21116 21116 21118 /2002 TRATUM 21118 /2002	21117 AND 21118 AND 21118 AND 21117 AND /2002 ITRATUM 21117 AND 21117 AND 21117 AND 21118 AND 21119 AND 21119 AND /2002 ITRATUM VES SEL 21118 21118 AND /2002 ITRATUM /2002 ITRATUM /2002 ITRATUM /2002 ITRATUM 21116 AND 21117 AND /2002 ITRATUM /2002 ITRATUM /2002 ITRATUM ITIT AND 21116 AND 21117 AND	21117 AND TARTA 21118 AND TARTA 21118 AND TARTA 21117 AND TARTA /2002 ITRATUM VESSEL GEAR 21117 AND TARTA 21118 AND TARTA /2002 ITRATUM VESSEL GEAR 21118 AND TARTA 21118 AND TARTA /2002 ITRATUM VESSEL GEAR 21118 AND TARTA ////////////////////////////////////	21117 AND TARTA 60 21118 AND TARTA 60 21118 AND TARTA 60 21117 AND TARTA 60 21117 AND TARTA 55 /2002 ITRATUM VES SEL GEAR DUR.(min) 21117 AND TARTA 60 21117 AND TARTA 62 21118 AND TARTA 60 21117 AND TARTA 62 21118 AND TARTA 4 /2002 ITRATUM VES SEL GEAR DUR.(min) 21118 AND TARTA 62 21118 AND TARTA 62 /2002 ITRATUM VES SEL GEAR DUR.(min) 21118 AND TARTA 62 /2002 ITRATUM VES SEL GEAR DUR.(min) 21118 AND TARTA 49 <th>21117 AND TARTA 60 S.S. 21117 AND TARTA 60 S.7 21118 AND TARTA 60 S.7 21117 AND TARTA 60 S.7 /2002 </th> <th>21117 AND TARTA 60 3.8 7038 21117 AND TARTA 60 3.7 6552 21118 AND TARTA 60 3.7 6552 21117 AND TARTA 55 3.7 6281 /2002 TRATUM VES SEL GEAR DUR.(min) SP.(Mn) LEN.(m) 21117 AND TARTA 60 3.8 7038 21117 AND TARTA 60 3.8 7038 21117 AND TARTA 60 3.8 7038 21116 AND TARTA 4 3.7 457 /2002 TRATUM VES SEL GEAR DUR.(min) SP.(Mn) LEN.(m) 21118 AND TARTA 62 3.8 7272 /2002 TRATUM VES SEL GEAR DUR.(min) SP.(Mn) LEN.(m) 21118 AND<!--</th--><th>21117 AND TARTA 60 3.8 7038 86 21118 AND TARTA 60 3.7 6852 134 21118 AND TARTA 60 3.7 6852 134 21117 AND TARTA 55 3.7 6281 58 /2002 TRATUM VESSEL GEAR DUR.(min) SP.(kn) LEN.(m) DEPTH(m) 21117 AND TARTA 60 3.8 7038 64 21117 AND TARTA 58 5.8 6403 25 21116 AND TARTA 4 3.7 457 70 /2002 TRATUM VESSEL GEAR DUR.(min) SP.(kn) LEN.(m) DEPTH(m) 21118 AND TARTA 62 3.8 7272 200 21118 AND TARTA 62 3.8 7272 173 /2002 TRATUM VESSEL <td< th=""><th>21117 AND TARTA 60 3.8 7038 86 10 21117 AND TARTA 60 3.7 6852 13.4 10 21118 AND TARTA 60 3.7 6852 13.4 10 21117 AND TARTA 55 3.7 6281 58 10 /2002 //2002 //2002 //2002 //2002 10 10 10 21117 AND TARTA 62 3.9 7464 80 10 21117 AND TARTA 60 3.8 7038 64 10 21117 AND TARTA 58 5.8 6805 25 10 21117 AND TARTA 4 3.7 457 70 10 //2002 TRATUM VESSEL GEAR DUR.(min) SP.(kn) LEN.(m) DEPTH(m) H.SP.(m) 21118 AND TARTA 62</th></td<></th></th>	21117 AND TARTA 60 S.S. 21117 AND TARTA 60 S.7 21118 AND TARTA 60 S.7 21117 AND TARTA 60 S.7 /2002	21117 AND TARTA 60 3.8 7038 21117 AND TARTA 60 3.7 6552 21118 AND TARTA 60 3.7 6552 21117 AND TARTA 55 3.7 6281 /2002 TRATUM VES SEL GEAR DUR.(min) SP.(Mn) LEN.(m) 21117 AND TARTA 60 3.8 7038 21117 AND TARTA 60 3.8 7038 21117 AND TARTA 60 3.8 7038 21116 AND TARTA 4 3.7 457 /2002 TRATUM VES SEL GEAR DUR.(min) SP.(Mn) LEN.(m) 21118 AND TARTA 62 3.8 7272 /2002 TRATUM VES SEL GEAR DUR.(min) SP.(Mn) LEN.(m) 21118 AND </th <th>21117 AND 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DUR.(min) SP.(kn) LEN.(m) DEPTH(m) 21117 AND TARTA 60 3.8 7038 64 21117 AND TARTA 58 5.8 6403 25 21116 AND TARTA 4 3.7 457 70 /2002 TRATUM VESSEL GEAR DUR.(min) SP.(kn) LEN.(m) DEPTH(m) 21118 AND TARTA 62 3.8 7272 200 21118 AND TARTA 62 3.8 7272 173 /2002 TRATUM VESSEL <td< th=""><th>21117 AND TARTA 60 3.8 7038 86 10 21117 AND TARTA 60 3.7 6852 13.4 10 21118 AND TARTA 60 3.7 6852 13.4 10 21117 AND TARTA 55 3.7 6281 58 10 /2002 //2002 //2002 //2002 //2002 10 10 10 21117 AND TARTA 62 3.9 7464 80 10 21117 AND TARTA 60 3.8 7038 64 10 21117 AND TARTA 58 5.8 6805 25 10 21117 AND TARTA 4 3.7 457 70 10 //2002 TRATUM VESSEL GEAR DUR.(min) SP.(kn) LEN.(m) DEPTH(m) H.SP.(m) 21118 AND TARTA 62</th></td<>	21117 AND TARTA 60 3.8 7038 86 10 21117 AND TARTA 60 3.7 6852 13.4 10 21118 AND TARTA 60 3.7 6852 13.4 10 21117 AND TARTA 55 3.7 6281 58 10 /2002 //2002 //2002 //2002 //2002 10 10 10 21117 AND TARTA 62 3.9 7464 80 10 21117 AND TARTA 60 3.8 7038 64 10 21117 AND TARTA 58 5.8 6805 25 10 21117 AND TARTA 4 3.7 457 70 10 //2002 TRATUM VESSEL GEAR DUR.(min) SP.(kn) LEN.(m) DEPTH(m) H.SP.(m) 21118 AND TARTA 62
Annex B - List of the Species code

Species Code	Scientific Name
ABRAVER	Abralia veranvi
ABRRALB	Abra alba
ACANEXI	Acantephyra eximia
ACANPEL	Acanthephyra pelagica
ACATPAL	Acantholabrus palloni
AEQUOPE	Aequipecten opercularis
ALCYPAL	Alcvonium palmatum
ALEPROS	Alepocephalus rostratus
ALLOMED	Alloteuthis media
ALLOSPP	Alloteuthis spp
ALLOSUB	Alloteuthis subulata
ALOPVUL	Alopias vulpinus
ALOSFAL	Alosa fallax
ALPHGLA	Alpheus glaber
ALPHPLA	Alpheus platvdactvlus
AMYGLUT	Amygdalum luteum
ANADDIL	Anadara diluvii
ANAMRIS	Anamathia rissoana
ANAPBIC	Anapagurus biconiger
ANAPLAE	Anapagurus laevis
ANARGRA	Anarchias eurvurus (grassii)
ANCINIC	Ancistroteuthis lichtensteini
ANGUANG	Anguilla anguilla
ANTHANT	Anthias anthias
ANTOMEG	Antonogadus megalokynodon
ANTOSPP	Antonogadus spp
APHIMIN	Aphia minuta
APOGIMB	Apogon imberbis
APORPES	Aporrhais pespelecani
APORSER	Aporrhais serresianus
APTECAE	<i>Apterichthus caecus</i>
ARGESPY	Argentina sphyraena
ARGOOLE	Argobuccinum olearium
ARGRACU	Argyropelecus aculeatus
ARGRHEM	Argyropelecus hemigymnus
ARGYREG	Argyrosomus regius
ARIOBAL	Ariosoma balearicum
ARISFOL	Aristaeomorpha foliacea
ARITANT	Aristeus antennatus
ARMIMAC	Arminia maculata
ARMITIG	Armina tigrina
ARNOIMP	Arnoglossus imperialis
ARNOLAT	Arnoglossus laterna
ARNORUP	Arnoglossus rueppelli
ARNOTHO	Arnoglossus thori
ASPICUC	Aspitrigla cuculus
ASPIOBS	Aspitrigla obscura
ASTARUG	Astacea rugosa

ASTRSPP	Astropecten spp
ATELROT	Atelecyclus rotundatus
ATRIFRA	Atrina fragilis (= Pinna
	pectinata)
AULOFIL	Aulopus filamentosus
BALICAR	Balistes carolinensis
BASOPRO	Bathysolea profundicola
BATHDUB	Batthypterois dubius
BATHMED	Bathypterois mediterraneus
BATISPO	Bathypolypus sponsalis
BATYMAR	Bathynectes maravigna
BATYSUP	Bathynectes superbus
BELLAPO	Bellotia apoda
BENSGLA	Benthosema glaciale
BENTROB	Benthocometes robustus
BERYDEC	Beryx decadactylus
BERYSPL	Beryx splendens
BLENBAS	Lipophrys (Blennius)
BLENCRI	Scartella (Blennius) cristata
BLENGAT	Parablennius (Blennius)
BLENOCE	Blennius ocellaris
BLENPAV	Lipophrys (Blennius) pavo
BLENSPP	Blennius spp.
BLENSPY	Aidablennius (Blennius)
BLENTEN	Parablennius (Blennius)
BOOPBOO	Boops boops
BOROANT	Borostomias antarcticus
BOTHPOD	Bothus podas
BRACRII	Brachioteutis riisei
BRESSPP	
BRURSPP	
BUCCCOR	Buccinulum corneum
BUCCHUN	Buccinum humphrevsianum
BUCCSPP	Buccinum spp.
BUGLLUT	Buglossidium luteum
CALAGRA	Calappa granulosa
CALCTUB	Calcinus tubularis
CALICHI	Calvntraea chinensis
CALLRIS	
CALLRUB	Callanthias ruber
CALMLYR	Callionymus lyra
CALMMAC	Callionymus maculatus
САЕМРНА	Synchiropus (Callionymus)
CALMRIS	Callionymus risso
CALOCOR	Calocarides coronatus
CALOMAC	Calocaris macandreae
CANCCAN	Cancellaria cancellata
CANIGRA	Calliostoma granulatum
CAPOAPE	Carros aper
CARAHIP	Carany hinnos
CARARHO	Carany rhonehus
CARARIO	Curuna monenus

CARCPLU	Carcharhinus plumbeus
CARCSPP	Carcharhinus spp
a l p p l art	
CARDACU	Acanthocardia aculeata
CARDECH	Acanthocardia (Cardium)
CARDSPI	Acanthocardia spinosa
CARISPP	Cardiomya spp.
CARISTE	Caridion steveni
CARPACU	Carapus acus
CASSECH	Cassidaria echinophora
CASSSAB	Phalium (Cassis) saburon
CASSTYR	Cassidaria tyrrhena
CATAALL	Cataetyx alleni
CECACIR	Centracanthus cirrus
CENONIG	Centrolophus niger
CENTGRA	Centrophorus granulosus
CENTUYA	Centrophorus uyato
CEPHVOL	Dactylopterus
CEPOMAC	Cepola rubescens
CERAMAD	Cerastocopelus maderensis
CHAUSLO	Chauliodus sloani
CHEOLAB	Chelon labrosus
CHIMMON	Chimaera monstrosa
CHLAOPE	
CHLAVAR	Chlamvs varia
CHLOGRA	Chlorotocus crassicornis
CHROCHR	Chromis chromis
CIRCCAS	Circomphalus casinus
CIROBOR	Cirolana horealis
CITHMAC	Citharus linguatula
CLOPBIC	Chlopsis hicolor
CLORAGA	Chlorophthalmus agassizii
COBLGAL	Corvnhohlennius galerita
COFLCOE	Coelorhynchus coelorhynchus
COFLOCC	Coelorhynchus occa (labiatus)
CONGCON	Conger conger
CORIUI	Corig inlig
CORVEUN	Comphanoidas quanthari
CRANSPR	Coryphienoides guenineri
CRASGIG	Crassostraa gigas
CRASOIO	Crussostrea gigas
	Crussostrea spp.
	Cubiceps gracills
CUSPCUS	Cuspitaria cuspitalia
CYCLEPIG	Cyclothone pygmaea
CYCLSPP	Cyclothone spp
CYMACOK	Cymatium corrogatum
CYMBOLL	Cymbium olla
CYNPFER	Cynoponticus ferox
DALOIMB	Dalophis imberbis
DARDARR	Dardanus arrosor
DARDCAL	Dardanus calidus
DASICEN	Dasyatis centroura
DASIPAS	Dasyatis pastinaca
DASITOR	Dasyatis tortonesi
DASIVIO	Dasyatis violacea
DENTDEN	Dentex dentex

DENTGIB	Denter gibbosus
DENTMAC	Dentex macrophthalmus
DENTMAR	Denter maroccanus
DENTSPD	Dentalium spp
	Dianhus holti
DIAPHOL	Diaphus notiti
	Diaphus melopociumpus
DIAPKAF	Diaphus rajinesqei
DIAPSPP	Diaphus spp
DICAMAY	Dicranodromia mayheuxi
DICELAB	Dicentrarchus labrax
DICEPUN	Dicentrarchus punctatus
DICOCUN	Dicologoglossa cuneata
DIODITA	Diodora italica
DIPGBIM	Diplacogaster bimaculata
DIPLANN	Diplodus annularis
DIPLCER	Diplodus cervinus cervinus
DIPLPUN	
DIPLSAR	Diplodus sargus
DIPLVUL	Diplodus vulgaris
DORHTHO	Dorhynchus thomsoni
DORILAN	Dorippe lanata
DORITHO	Dorhynchus thomsoni
DORSVER	Doris verrucosa
DOSISPP	Dosinia spp
DROMPER	Dromia personata
EBALCRA	Ebalia cranchi
EBALNUX	Ebalia nux
ECHEMIR	Echelus myrus
ECHIDEN	Echiodon dentatus
ELECRIS	Electrona rissoi
ELEDCIR	Eledone cirrosa
ELEDMOS	Eledone moschata
ELEDSPP	Eledone spp
ENGRENC	Engraulis encrasicholus
EPHIGUT	Ephippion guttiferum
EPIGCON	Epigonus constanciae
EPIGDEN	Epigonus denticulatus
EPIGTEL	Epigonus telescopus
EPINAEN	Epinephelus aeneus
EPINALE	Epinephelus alexandrinus
EPINCAN	Epinephelus caninus
EPINGUA	Epinephelus guaza
EPINSPP	Epinephelus spp
FRETKLE	Eretmonhorus kleinenhergi
FRGACLO	Erennophorus Methenbergi Fragsticus clouei
ETHIMAS	Et gustieus ciouci
ETHOWING	Etmontarus spinar
FUCHLIG	Euchirograpsus liguricus
EUCDEDD	Euchtrograpsus tiguricus
	Fundaugiidaa
LU	Eupnausnaae
EUKIASP	Eurynomia aspera
	Eurigia gurnaraus
EVEKBAL	Evermannella balbol (ou
FLEXELE	UUIUO) Elaropactan flaruosus
FLEAFLE	Europecien jiexuosus
FUNCWOO	r unchalla woodwaral

FUSIROS	Fusinus rostratus
FUSTUND	Fusituris undatiruga
GADAMAR	Gadella maraldi
GADIARG	Gadiculus argenteus
GADUMER	Merlangius merlangus
GAIDMED	Gaidropsarus mediterraneus
GAIDVUL	Gaidropsarus vulgaris
GALADIS	Galathea dispersa
GALAINT	Galathea intermedia
GALANEX	Galathea nexa
GALEGAL	Galeorhinus galeus
GALIDEC	Galeoides decadactylus
GALUATL	Galeus atlanticus
GALUMEL	Galeus melastomus
GENNELE	Gennadas elegans
GEPYDAR	Gephyroberyx darwini
GERYLON	Geryon longipes
GIBBSPP	Gibbula sp.
GLOSLEI	Glossanodon leioglossus
GLOSVAL	Glossodoris valenciennesi
GLOUHUM	Glossus humanus
GNATMYS	Gnathophis mystax
GOBICOL	Deltentosteus (Gobius)
GOBIFRI	Leusueurigobius (Gobius)
GOBIGEN	Gobius geniporus
GOBILIN	Crystallogobius (Gobius)
GOBINIG	Gobius niger
GOBIQUA	Deltentosteus(Gobius
GOBISAN	Lesueurigobius (Gobius)
GOBISPP	Gobius spp
GOBISUE	Lesueurigobius suerii
GONERHO	Goneplax rhomboïdes (=
	angulata)
GONICOC	Gonichthys coccoi
GONODEN	Gonostoma denudatum
GYMACIC	Gymnammodytes cicerellus
GYMNALT	Gymnura altavela
HADRCRA	Hadriana craticuloides
HELIDAC	Helicolenus dactylopterus
HEPTPER	Heptranchias perlo
HETEDIS	Heteroteuthis dispar
HEXAGRI	Hexanchus griseus
HEXAVIT	Hexanchus nakamurai
HINIINC	Hinia incrassata
HINIRET	Hinia reticulata
HIPPHIC	Hippocampus hippocampus
HISTBON	Histioteuthis bonnellii
HISTREV	Histioteuthis reversa
HISTSPP	Histioteuthis spp
HOMAVUL	Homarus vulgaris
HOMOBAR	Homola barbata
HOPLATL	Hoplostethus atlanticus
HOPLMED	Hoplostethus mediterraneus
HYGOBEN	Hygophum benoiti
HYGOHIG	Hygophum hygomii
HYMEITA	Hymenocephalus italicus

HYMPSPP	Hymenopenaeus spp.
HYPESPP	Hyperiidae
HYPOPIC	Hyporhamphus picarti
ICHTOVA	Ichthyococcus ovatus
ILLECOI	Illex coindetii
INACCOM	Inachus communissimus
INACDOR	Inachus dorsettensis
INACTHO	Inachus thoracicus
IAXENOC	Jarea nocturna
LABRVIR	I abrus viridis
LADRVIK	Labrus himaculatus
	Ladrus dimaculalus
	Lacocombalua lacocombalua
LAUOLAU	
LAMAPUS	Lampanyctus pusilius
LAMASPP	Lampanyctus spp
LAMPGUI	Lampris guttatus
LAPPFAS	Lappanella fasciata
LATRSPP	
LEPALEP	Lepadogaster lepadogaster
LEPICAU	Lepidopus caudatus
LEPMBOS	Lepidorhombus boscii
LEPMWHS	Lepidorhombus whiffiagonis
LEPOLEP	Lepidion lepidion
LEPTCAV	Lepidotrigla cavillone
LEPTDIE	Lepidotrigla dieuzeidei
LESTSPD	Lestidiops sphyrenoides
LESTSPP	Lestidiops spp
LICHAMI	Lichia amia
LIGUENS	Ligur ensiferus
LISSCHI	Lissa chinagra
LITHMOR	Lithognathus mormyrus
LIZAAUR	Liza aurata
LIZARAM	Liza ramada
LIZASAL	Liza saliens
LOBIDOF	Lobianchia dofleini
LOBIGEM	Lobianchia gemellarii
LOLIFOR	Loligo forbesi
	Loligo yulgaris
	Longo vuiguris
	Lophius Didegussu
	Lophus pisculorius
	Lunatia catena
LUNAFUS	Lunatia fusca
LUTKSPP	Lutraria spp.
MACOSCO	Macrorhamphosus scolopax
MACRLIN	Macropodia linaresi
MACRLON	Macropodia longipes
MACRROS	Macropodia rostrata
MAJACRI	Maja crispata
MAJASQU	Maja squinado
MAURMUE	Maurolicus muelleri
MCPIARC	Liocarcinus arcuatus
MCPICOR	Liocarcinus corrugatus
MCPIDEP	Liocarcinus (Macropipus)
MCPIMAC	Liocarcinus maculatus
-	1

MCPIPUB	Necora (Macropipus) puber
MCPITUB	Macropipus tuberculatus
MEGANOR	Meganyctiphanes norvegica
MELAATL	Melanostigma atlanticum
MERLMER	Merluccius merluccius
MICMPOU	Micromesistius poutassou
MICOSAB	Microcosmus sabatieri
MICRMCS	Microstoma microstoma
MICUAZE	Microchirus azevia
MICUBOS	Microchirus boscanion
MICUOCE	Microchirus ocellatus
MICUVAR	Microchirus variegatus
MOLAMOL	Mola mola
MOLVDYP	Molva dipterygia
MOLVMOL	Molva molva
MONOHIS	Monochirus hispidus
MORAMOR	Mora moro
MORIRUG	Morio rugosa
MUGICEP	Mugil cephalus
MUGISPP	Mugilidae
MULLBAR	Mullus barbatus
MULLSUR	Mullus surmuletus
MUNICUR	Munida curvimana
MUNIINT	Munida intermedia
MUNIIRI	Munida iris
MUNIPER	Munida perarmata (=
	tenuimana)
MUNIPUG	Munida muqosa
MUNIKUU	Munida tanuimana
MURAHEI	Muraana halana
MUREBRA	Rolinus (Murar) brandaris
MURETRU	Muray trunculus
MUSTAST	Mustelus asterias
MUSTASI	Mustelus usierius
MUSTMUS	Mustelus meatelus
MVCOPUN	Musicius musicius Musicophum punctatum
MYCOSPP	Myctophidae
MYCTRUB	Myctophiade Myctoporca mibra
MYLIAOU	Mycieropercu rubru Myliobatis aquila
MYTIGAL	Mytilus galloprovincialis
MUTICAL	Mytilus guiloprovincialis
NANSORI	Nansenia oblita
NASSSPP	Nassariidae
NATIMII	Naticarius milleminetatus
NATISPP	Naticidae
NAUCDUC	Naucrates ductor
NEMISCO	Nemichthys scolonaceus
NFORCAR	Neorossia caroli
NEPRNOR	Nenhrons norvegicus
NEROMAC	Neronhis maculatus
NFROOPH	Nerophis onhidion
NETOBRE	Dysomma (Nettodarus)
NETTMEI	Nettastoma melanurum
NEZUAEO	Netumia apaualis
NEZUALQ	Nezumia selevorhynehus
TIELUSUL	INCLUTICU SCIETOT HYTICHUS

NOTABON	Notacanthus bonapartei
NOTORIS	Notolepis rissoi
NOTSBOL	Notoscopelus bolini
NOTSELO	Notoscopelus elongatus
NOTSKRO	Notoscopelus kroyerii
OBLAMEL	Oblada melanura
OCENERI	Ocenebra erinacea
OCTODEP	Octopus defilippi
OCTOMAC	Octopus macropus
OCTOSAL	Octopus salutii
OCTOSPP	Octopus spp
OCTOTET	Pteroctopus tetracirrhus
OCTOVUL	Octopus vulgaris
OCYTTUB	Ocythoe tubercolata
ODONFER	Odontaspis ferox
ODONTAU	Eugonphodus (Odontaspis)
OEDALAB	Oedalechilus labeo
OLIGATE	Oligopus ater
ONYCBAN	Onvchoteuthis banksi
ONYCSPP	Onvchoteuthis spp
OPDIBAR	Ophidion barbatum
OPDIROC	Ophidion rochei
OPHCRUF	Ophichthus rufus
OPHISER	Ophisurus serpens
OPHOFRA	Ophiothrix fragilis
OPISSPP	Opisthobranchia spp
OPLOSPP	Onlonhoridae
OPTOAGA	Opistoteuthis agassizii
OSTREDU	Ostrea edulis
OSTRSPP	Ostrea spp
OXYNCEN	Oxynotus centring
PAGEACA	Pagellus acarne
PAGEBOG	Pagellus bogaraveo
PAGEERY	Pagellus erythrinus
PAGIERE	Paguristes eremita
PAGUALA	Pagurus alatus
PAGUCUA	Pagurus cuanensis
PAGUEXC	Pagurus excavatus
PAGUFOR	Pagurus forbesii
PAGUPRI	Pagurus prideauxi
PALIELE	Palinurus elenhas
PALIMAU	Palinurus mauritanicus
PANDPRO	Pandalina profonda
PAPANAR	Parapandalus narval
PAPELON	Parapenaeus longirostris
PAPOHIM	Parapristinoma humile
PAPOOCT	Parapristipoma octolineatum
PARALEP	Paralinaris lentochirus
PARICOR	Paralenis coregonoides
PARI SPF	Paralenis speciesa
PAROCUN	Paromola cuvieri
PARTANG	Parthenone angulifrons
	Parthenone macrocholog
PARTMAC	Parthenone massena
	Pasinhaga multidentata
IASIMUL	1 asipnaea muitaentata

PASISIV	Pasiphaea sivado
PECTJAC	Pecten jacobaeus
PECTMAX	Pecten maximus
PELTATR	Peltodoris atromaculata
PENAKER	Penaeus kerathurus
PENNPHO	Pennatula phosphorea
PERCGRA	Periclimenes granulatus
PERICAT	Peristedion cataphractum
PHALGRA	Phallium granulatum
PHILECH	Philoceras echinulatus
PHOTSPP	
PHRYREG	Phrynorhombus regius
PHYIBLE	Phycis blennoides
PHYIPHY	Phycis phycis
PHYLTRU	Phylonotus
PHYSDAL	Physiculus dalwigki
PILUSPI	Pilumnus spinifer
PILUVIL	Pilumnus villosissimus
PINNNOB	Pinna nobilis
PINNPEC	
PINOPIN	Pinnotheres pinnotheres
PISAARN	Pisa armata
PISANOD	Pisa nodipes
PISILON	Pisidia longicornis
PLATFLE	Platichthys flesus
PLEOMED	Plectorhinchus mediterraneus
PLERMEC	Pleurobranchea meckely
PLESACA	Plesionika acanthonotus
PLESANT	Plesionika antigai
PLESEDW	Plesionika edwardsii
PLESGIG	Plesionika gigliolii
PLESHET	Plesionika heterocarpus
PLESMAR	Plesionika martia
PLEUPIL	Pleurobrachia pileus
POLARIS	Polyacanthonotus rissoanus
POLBHEN	Polybius henslowi
POLCTYP	Polycheles typhlops
POLYAME	Polyprion americanum
POMABEN	Pomadasys incisus (bennetti)
POMSMAR	Pomatoschistus marmoratus
POMSMIC	Pomatoschistus microps
POMSMIN	Pomatoschistus minutus
POMTSAL	Pomatomus saltator
PONIKUH	Pontinus kuhlii
PONPNOR	Pontophilus norvegicus
PONPSPI	Pontophilus spinosus
PONTCAT	Pontocaris cataphractus
PONTLAC	Pontocaris lacazei
PRIOGLA	Prionace glauca
PROCEDU	Processa edulis
PROCMED	Processa canaliculata
PROCNOU	Processa nouveli
PROSSPP	Prosobranchia spp
PSAMMIC	Psamechinus
PSENPEL	Psenes pellucidus
PSETMAX	Psetta maxima

PSEVCAR	Pseudosimnia carnea
PTEOBOV	Pteromylaeus (Myliobatis)
PTERHIR	Pteria hirundo
PUNTPUN	Diplodus (Puntazzo) puntazzo
RAJAALB	Raja alba
RAJAAST	Raja asterias
RAJABAT	Raja batis
RAJABRA	Raja brachyura
RAJACIR	Raja circularis
RAJACLA	Raja clavata
RAJAFUL	Raja fullonica
RAJAMEL	Raja melitensis
RAJAMIR	Raja miraletus
RAJAMON	Raja montagui
RAJANAE	Raja naevus
RAJAOXY	Raja oxvrhvnchus
RAJAPOL	Raja polystigma
RAJARDA	Raja radula
RAJAUND	Raja undulata
REGAGLE	Regalecus glesne
RHINCEM	Rhinobatos cemiculus
RHINRHI	Rhinobatos rhinobatos
RHIPMAR	Rhinoptera marginata
RHYNHEP	Rhynchogadus hepaticus
RICHFRE	Richardina fredericii
RISSDES	Rissoides desmaresti
RISSPAL	Rissoides pallidus
ROCHCAR	Rochinia carpenteri
RONDMIN	Rondeletiola minor
ROSSMAC	Rossia macrosoma
SADASAR	Sarda sarda
SALOTRU	Salmo trutta trutta
SARDPIL	Sardina pilchardus
SARIAUR	Sardinella aurita
SARIMAD	Sardinella maderensis
SARPSAL	Sarpa salpa
SCAEUNI	Scaeurgus unicirrhus
SCALSCA	Scalpelum scalpelum
SCAPNIG	Scaphander lignarius
SCHEOVA	Schedophilus ovalis
SCIAUMB	Sciaena umbra
SCOBSAU	Scomberesox saurus
SCOHRHO	Scophthalmus rhombus
SCOMPNE	Scomber (Pneumatophorus)
	japonicus
SCOMSCO	Scomber scombrus
SCORELO	Scorpaena elongata
SCORLOP	Scorpaena loppei
SCORMAD	Scorpaena maderensis
SCORNOT	Scorpaena notata
SCORPOR	Scorpaena porcus
SCORSCO	Scorpaena scrofa
SCYLARC	Scyllarus arctus
SCYLLAT	Scyllarides latus
SCYLPYG	Scyllarus pygmaeus
SCYMLIC	Dalatias (Scymnorhinus) licha

SCYOCAN	Scyliorhinus canicula
SCYOSTE	Scyliorhinus stellaris
SEPENEG	Sepietta neglecta
SEPEOBS	Sepietta obscura
SEPEOWE	Sepietta oweniana
SEPESPP	Sepietta spp
SEPIELE	Senia elegans
SEPIOFF	Sepia officinalis
SEPIORB	Sepia orbignyana
SEPOAFF	Sepial affinis
SEPOINT	Sepiola intermedia
SEPOLIG	Sepiola ligulata
SEPOROB	Sepiola robusta
SEPORON	Sepiola rondeleti
SEPOSPP	Seniola snn
SERAATR	Serranus atricauda
SERACAB	Serranus cabrilla
SERAHEP	Servanus honatus
SERASCR	Servanus scriba
SERGARC	Sergestes arcticus
SERGROR	Sergestes robustus
SERGEAR	Sergestes robustus Sergestes sargassi (- hansoni)
SERUSAK	Seriola dumarili
SOL EIMD	Solog impgr
SOLENIE	Solea Impar
SOLENLE	Solea kielni
SOLELAS	Solea lascaris
SOLESEN	Solea senegalensis
SOLEVUL	Solea vulgaris
SOLOMEM	Solenocera membranacea
SPARAUR	Sparus aurata
SPARCAE	Pagrus (Sparus)
SPARPAG	Pagrus (Sparus) pagrus
SPHOCUI	Sphoeroides cutaneus
SPHYSPY	Sphyraena sphyraena
SPICFLE	Spicara flexuosa
SPICMAE	Spicara maena
SPICSMA	Spicara smaris
SPISSPP	Spisula spp
SPISSUB	Spisula subtruncata
SPODCAN	Spondyliosoma cantharus
SPRASPR	Sprattus sprattus
SQUAACA	Squalus acanthias
SQUABLA	Squalus blainvillei
SQUIMAN	Squilla mantis
SQUTACU	Squatina aculeata
SQUTOCL	Squatina oculata
SQUTSPP	Squatina spp
SQUTSQU	Squatina squatina
STEPDIA	Stephanolepis diaspros
STICREG	Stichopus regalis
STOLLEU	Stoloteuthis leucoptera
STOMBOA	Stomias boa
STROFIA	Stromateus fiatola
SUBECAR	Suberites carnosus
SUBEDOM	Suberites domuncula
SUBESPP	Suberites spp.

SYMBVER	Symbolophorus veranyi
SYMDCIN	Symphodus cinereus
SYMDMED	Symphodus mediterraneus
SYMDOCE	Symphodus ocellatus
SYMDROS	Symphodus rostratus
SYMDTIN	Symphodus tinca
SYMPLIG	Symphurus ligulatus
SYMPNIG	Symphurus nigrescens
SYNDSAU	Synodus saurus
SYNGACU	Syngnathus acus
SYNGPHL	Syngnathus phlegon
SYNGTAE	Syngnathus taenionotus
SYNGTYP	Syngnathus typhle
TAENGRA	Taeniura grabata
TELLSPP	Tellina spp
TETHFIM	Tethys fimbria
TODASAG	Todarodes sagittatus
TODIFRI	Todaronsis eblanae
TORPMAR	Torpedo marmorata
TORPNOR	Torpedo nahiliana
TORPTOR	Torpedo torpedo
TRACMED	Trachurus mediterraneus
	Trachurus nicturatus
	Trachurus trachurus
TRACIRA	Trachinus aranous
	Trachinus draco
	Trachinus radiatus
	Trachyrhynchus
	Trachysoornia oristulata
	Triala hearing
TRICLUC	Trigla lucerna
TDIII ED	Trigla lyra
TDIDI AC	Trichurus lepturus
	Trigoporus tastoviza
TDIGLUG	Trisopterus hussus
TRISLUS	Trisopierus iuscus
	Charonia (Iriton) rubicunaa
	Turritella communis
	<i>Turritella spp</i>
UMBAMED	Umbraculum mediterraneum
UMBRCAN	Umbrina canariensis
UMBRCIR	Umbrina cirrosa
UMBRRON	Umbrina ronchus
URANSCA	Uranoscopus scaber
VENUSPP	Venus spp.
VENUVER	Venus verrucosa
VINCATT	Vinciguerria attenuata
VINCPOW	Vinciguerria poweriae
XANTCOU	Medaeus (Xantho) couchi
XENOCRI	Xenophora crispa
XENOSPP	Xenophora spp
XIPHGLA	Xiphias gladius
ZEUSFAB	Zeus faber

Annex C: Example of a sampling form used during the AdriaMed Trawl Survey

F		AdriaMed	Trawl Surve	у	
Haul form					
PARTNER:	VESSEL:	DAY:	MONTH:	YEAR:	HAUL code:

COORDINATES AT BEGINNING

TIME (00:00):	LATITUDE (00°00'00)	LONGITUDE (00°00'00):	DEPTH (m):
TIME (00:00):	LATITUDE (00°00'00):	LONGITUDE (00°00'00):	DEPTH (m):

COORDINATES AT THE END

ROUTE:	SPEED (knots):	DURATION (min.):	SWEEP LENGTH:	WARP LENGTH:	BOTTOM SHAPE:

WEATHER CONDITIONS:	SEA CONDITIONS:	WIND DIRECTION AND SPEED:

NOTES:

ENVIRONMENTAL PARAMETERS:	Stored file code (.bin):	Stored file code (ASCII):
SCIENTIFIC STAFF ON BOARD:		