## Exxon Valdez Oil Spill State/Federal Natural Resource Damage Assessment Final Report

Database Management

Fish/Shellfish Study Number 30 Final Report

> Carmine DiCostanzo Bruce P. Simonson

Alaska Department of Fish and Game Division of Commercial Fisheries Computer Services Section 1255 W. 8th Street Juneau, Alaska 99802-5526

June 1993

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**Study History:** Fish/Shellfish Study Number 30 was initiated as part of a 1992 detailed study plan (Database Management) in recognition of the need to catalog and maintain electronic copies of raw data generated by natural resource damage assessment projects.

Abstract: In order to evaluate the extent of damage and injury to natural resources as a result of the Exxon Valdez oil spill, the following types of data would need to be synthesized and carefully managed: 1) historical baseline data to establish conditions prior to the spill; 2) data generated by damage assessment projects to establish damage and extent of injury; and 3) data generated by ongoing monitoring projects to determine the effectiveness of restoration programs. This project was implemented to facilitate access to historical datasets maintained by the Alaska Department of Fish and Game, and to address the need to preserve the raw data generated by selected damage assessment projects associated with the Exxon Valdez oil spill. Procedures for developing data schemata and data dictionaries were implemented to support the possibly of integration of independently generated databases into geographic information systems (GIS) and other consolidated databases. As this project closed out, final project data with spatial and temporal coverage descriptions were solicited from principal investigators to facilitate future integration of databases, and to allow for ecosystem views of affected habitat and injured resources.

<u>Key Words</u>: Damage assessment, database management, databases, Exxon Valdez, geographic information systems, historical baseline data, raw data.

### <u>Citation:</u>

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#### Executive Summary

Data play a fundamental role in determining the extent of damage and injury to natural resources as the result of human error. In the case of the oil spill caused by the T/V Exxon Valdez in March of 1989, it was recognized that the following types of data would need to be synthesized and carefully managed:

- historical baseline data to establish conditions prior to the spill
- data generated by damage assessment projects to establish damage and extent of injury
- data generated by ongoing monitoring projects to determine the effectiveness of restoration programs

This project was implemented to facilitate access to historical datasets maintained by the Alaska Department of Fish and Game, and to address the need to preserve the raw data generated by selected damage assessment projects associated with the *Exxon Valdez* oil spill.

Although the integration of independently generated databases into geographic information systems (GIS) and other consolidated databases was not part of this project's objectives, procedures for developing data schemata and data dictionaries were implemented to support this possibility. As this project closed out, final project data with spatial and temporal coverage descriptions were solicited from principal investigators to facilitate future integration of databases, and to allow for ecosystem views of affected habitat and injured resources.

## Introduction

The Alaska Department of Fish and Game (ADF&G) maintains several extensive historical and active databases to support its ongoing research and management activities. These datasets are an important component of the baseline data required in the damage assessment effort related to the *Exxon Valdez* oil spill.

Because of the importance of new data generated by damage assessment projects, special measures were taken to ensure their protection. Existing computer and telecommunications facilities within the ADF&G provided the backbone for these efforts, with additional resources applied as needed by oil spill projects.

In addition, this project provided technical assistance to principal investigators of damage assessment projects in the form of computer networking, data archival, database definition and documentation, report preparation, and software support.

## **Objectives**

This database management project was implemented with the following objectives:

- to facilitate access to selected historical and active datasets maintained by the Alaska Department of Fish and Game (ADF&G) in a variety of electronic formats,
- 2) to ensure that new data generated by selected damage assessment projects would be protected from accidental loss and would be suitably archived, and to help ensure the longevity of these data after projects close-out,
- 3) to coordinate cost effective access to ADF&G's existing computer and telecommunications facilities for oil spill related projects and activities, and
- to provide technical assistance to principal investigators where possible and appropriate.

#### <u>Methods</u>

Database Management - Historical Datasets

Population levels of injured species in the area affected by the oil spill form an important component of the baseline information required for damage assessment. Several databases routinely maintained by ADF&G that relate to population levels were identified, including the department's historical harvest database (multiple species), and species specific databases of historical escapement and age/weight/length data.

The importance of the department's historical harvest database was immediately recognized. This database is maintained by the division of commercial fisheries, and contains over twenty years of data on some 200 species of fish and shellfish. Because harvest data play a key role in estimating population levels of many species in the area of the oil spill, many damage assessment projects required access to this database. In addition, it was anticipated that there would be an increased demand by the public and other agencies for information contained in this database.

This project developed a system to address these new demands on this historical data according to the following priorities: (1) completeness and accuracy of the contents of the database, (2) speed and ease of retrieval, and (3) support for a variety of software formats.

per-project basis. through technical Other historical datasets technical support provided by this project. Access sets maintained by ADF&G were used to these datasets was facilitated used о'n ք

Database Management -Damage Assessment Datasets

database project and care of data the for This database management project was initiated during th second year after the oil spill. Damage assessment projects already in place at the time, and principal investigators had assumed acquisition, synthesis, and interpretation their responsibility of databases is best managed by those responsible for own projects. was created; for developing and maintaining datasets This ; approach it was re recognized that the was not replaced of data. when design the this were

Nevertheless, proper archival and detailed do datasets is a technical issue that may impede the of specific damage assessment work. Furthermore, future single conceived and cific damage assessment work. Furthermore, when separate ved and executed projects must be archived with an eye use and integration, it is cost-effective to dedicate project to coordinate this task. and detailed documentation stated purpose separately for Q of

documenting tools, were distributed to project leaders and key staff. other investigators networks, data For these technical issues were made available to the principal tigators of damage assessment projects. Guidelines fo datasets, reasons, personnel experienced with computer backup and archival, database documentation, along with examples assessment projects. and associated for software and

Technical Support

In addition to database work, this project provided computer technical support for selected oil spill projects in ADF&G. This support was provided at three levels: (1) computer wide area network (WAN) interconnection between project administration and project staff using existing telecommunications facilities within the ADF&G, (2) computer local area network (LAN) support at regional and field offices where oil spill projects were undertaken, and (3) detailed technical support to principal undertaken, and (3) detailed technical support to principal investigators of oil spill projects on specific issues.

documentation between project personnel and oil spill administration. At the LAN level, additional disk capacity was allocated on ADF&G computer networks to store new project data. Network wiring dovetailed with existing token-ring and ethernet backbones on ADF&G CF'e TAMP assessment data as it i assessment included procedures express Support intent were on ADF&G of reducing the implemented on CF's LANS. CF's was acquired. development WAN was implemented Additional backup and archival existing file risk of 0f Support for principal database accidental loss servers, rt 0 management ensur with of ſ۵ the

procedures, data export facilities, base level GIS, assistance with document production and preparation of presentation materials, and support for hardware and other technical issues.

#### Results

#### Databases

The primary work products of this project relate to the databases used or created by selected ADF&G damage assessment projects. The extent and availability of documentation of these datasets is a function of the involvement of principal investigators in the data management process. In some cases, the detail of documentation which is available includes complete database schema and data dictionaries, but more typically this documentation is at the level of general database descriptions and lists of electronic files.

Historical Datasets

A complete work-up of the harvest database was conducted, including a full schema and detailed data dictionary, updated internal code lists, and procedures for data maintenance and version control. The database was ported to a UNIX platform (funded by the ADF&G independent of the oil spill project). Software was written to provide access to the database over the ADF&G commercial fisheries WAN; backend procedures were implemented to provide reports and electronic data extracts in numerous database, spreadsheet, and statistical formats. Requests for information are automatically logged in a relational SQL database for resubmittal with or without modification of report parameters.

During the development of this system, access to historical harvest data was provided by project personnel on a case-by-case basis. At the time of this writing, the automated system is in the last phases of beta-testing, with final implementation and documentation due in October of 1993. The system will provide unattended custom reporting and data extracts in a wide variety of formats on the ADF&G commercial fisheries WAN.

A comprehensive review of the contents and correctness of data contained in this harvest database was implemented in the initial phases of this project. A report detailing the changes made to the historic data was published, along with periodic reports relating to subsequent version control.

Daily harvest records from 1969 through the present are represented in this database. Locations are coded by ADF&G statistical area, the primary means of defining GIS parameters used by management and research at the ADF&G. The main fields of this database that are useful to assessment work include species, catch in numbers and pounds, gear type, harvest type, and data on specific permits used to land the catch. Distribution of information in this database is constrained by Alaska law (in order to protect the fishing interests of private individuals); the system has been designed to take this into account.

Output can be provided in a wide variety of electronic formats suitable for databases, spreadsheets, and statistical packages. A large number of printed reports are also supported by the system.

A portion of the database documentation for this historical database has been extracted and included in Appendix A. This is representative of the documentation available for this database.

#### Damage Assessment Datasets

Individual damage assessment projects on the ADF&G CF WAN were allocated disk space on file servers in local ADF&G offices. These file servers have regularly scheduled archive and backup procedures, which were used to preserve copies of historical databases and new data collected by damage assessment projects.

Instructions for the detailed documentation of databases were supplied to principal investigators, along with the fully completed documentation of the historical harvest database. Recommendations for version control of evolving datasets were made, as well as proposed procedures for the orderly release of project data as they came available.

As this project and other damage assessment projects were in the final phases of completion, requests for electronic copies of project data increased. This project was asked to facilitate consolidation of project data and databases for selected ADF&G assessment work. A publication is in preparation which will summarize the results of this effort.

## Location Specific Activities

Primary support for this project was coordinated out of the computer services section of the division of commercial fisheries of the ADF&G, headquartered in Juneau. Through the ADF&G CF WAN, network resources and databases were monitored and managed from the Juneau office.

Multiple offices of the ADF&G required the support of this project to ensure that the data associated with damage assessment projects were secure and safe from accidental loss. In general, the support provided took advantage of systems already in place; these systems were enhanced where needed by damage assessment projects. The following summarizes the major activities which were required in local offices of the ADF&G, and indicates the level of support needed to coordinate damage assessment work of multiple projects, and to ensure that critical datasets are protected from accidental loss.

## Juneau

Work on the historic harvest database was done in Juneau, which required the installation of additional hardware and software architectures, partially funded out of this oil spill project's budget. Additional disk capacity was installed, an SQL database of job requests was designed and installed, a UNIX workstation was commissioned to handle reporting and data extracts, and telecommunications facilities were established which were used to monitor WAN availability for oil spill projects.

Network support was coordinated out of this office; documentation and guidelines detailing the use of the ADF&G CF WAN were provided for oil spill projects by personnel from the Juneau office. In addition, support for the preparation of reports and presentations was headquartered in this office. Along these lines, the most important items were the installation of a simple baseline GIS package, and procedures for the cost effective production of 35 mm slides needed for formal presentations.

The Juneau office also assisted with coordinating efforts of the NOAA Auke Bay Lab (ABL) and the principal investigators of oil spill projects. ABL was provided with a set of the database documentation tools developed by this project. Preliminary steps at integrating the ABL hydrocarbon database with ADF&G historical and damage assessment datasets were completed.

#### Cordova

The Cordova office required substantial support. While a direct telecommunications connection to this office had been planned by the ADF&G for some time, the oil spill made this data link critical. Through the state agency responsible for the management of telecommunications, a 19.2 KB data path was installed that connected the Cordova office with the rest of the ADF&G CF's WAN.

The Cordova LAN file server was upgraded to Novell Netware 3.11, and additional disk capacity was made available for storing oil spill datasets.

An additional complication at the Cordova office arose through the temporary lease of a building dedicated to oil spill projects, which was not easily connected to the WAN. This building, with its significant datasets, was connected to the WAN through the installation of a spread spectrum ethernet bridge. With the completion of a thinwire ethernet backbone, the datasets in this building were incorporated into the regular archive and backup cycles of the Cordova office LAN.

#### Anchorage

The Anchorage office of the ADF&G served as a focal point for the interaction of principal investigators and managers of oil spill activities. Most of the correspondence relating to damage assessment projects, interim status reports, final reports, proposals for ongoing work, and budget management passed through this office. This project provided direct support for this communication, through the use of electronic mail on the WAN, and additional storage capacity for the electronic documents and datasets involved.

In addition, ADF&G upgraded the file server in Anchorage to handle the increased load induced by oil spill activities. Electronic storage was allocated in a data repository, which was made available to projects upon close-out. Additional archive and data backup procedures were implemented to protect the data stored in this repository.

## Kodiak

The technical support provided by this project to the ADF&G Kodiak office included upgrades to electronic mail services, and an extensive reworking of network design and software by ADF&G's commercial fisheries computer services staff. The local computer staff in Kodiak assumed responsibility for data archival and backup procedures.

Kenai Peninsula

The support for offices of the ADF&G located on the Kenai peninsula is representative of the difficulty inherent in managing major damage assessment work in remote areas of Alaska. Like many of the isolated offices of the ADF&G, these sites are not connected to the ADF&G CF WAN, yet there is need to archive and backup data, facilitate communication between researchers, staff, biometric support, and project management, to assist with version control of evolving datasets, and provide technical support for computer hardware and software.

The oil spill exacerbated this problem in the Kenai peninsula offices; in particular, while the additional demands on local resources were successfully met, it was not without exceptional effort by the principal investigators involved with damage assessment work.

This project worked with ADF&G staff and computer services to implement access to the electronic mail facility on the WAN. This important data link provided communication between project personnel and oil spill management in Anchorage and Juneau.

The raw data acquired by the projects out of these offices were somewhat atypical for damage assessment work; in particular, large volumes of data were obtained and analyzed using specialized equipment. Because the interpretation of these data are dependent on dedicated equipment, data for these projects were kept on-site. The local ADF&G offices assumed responsibility for archive and backup of these data.

## **Discussion**

Data play a vital role in determining damages and the extent of injury to natural resources. In addition, demands on data are often made that exceed their original scope and purpose. For example, within the scientific arena, integration of separately acquired data is the key to rational views of ecosystems and realistic definition of natural habitat; in the legal and political arena, data can be used to justify litigation claims and to drive management policies.

The Exxon Valdez oil spill resulted in an unprecedented program of data acquisition and scientific effort to determine injury to natural resources. Millions of dollars were spent acquiring data by damage assessment projects, which, for the most part, were separately conceived and executed.

It is inherent in disasters of this sort that there is no lead time for creating a centralized effort with standards for data formats, frequency and extent of sampling, and systems for analysis and synthesis. The best that can be done is to act quickly, with the best talent available, to establish good projects with demonstrable utility. The approach might be different, if, for example, oil spills and other disasters were scheduled events, or alternatively, if it were assumed that there is a non-zero probability that oil spills and other disasters will occur in certain areas in specified time frames.

This project made clear the efficacy of managing project data in two separate modes: the "work in progress" mode, where principal investigators are actively building and analyzing new datasets, and the "close-out" mode, where the data associated with a project are archived and suitably documented to ensure longevity after the project ends, and the possibility for use in new contexts.

#### Support for Work in Progress

During the "work in progress" mode, principal investigators must be given support as they build data structures and systems for data entry, version control, archival, and analysis. It is clearly desirable to minimize the impact of such technical issues on an investigator's time. In Alaska, where an adequate telecommunications network is available for monitoring and managing electronic copies of databases (within the ADF&G), it appears the most cost effective means of accomplishing this is through centralized support.

It is essential that principal investigators maintain complete control and ownership of data while a project is underway. This ensures the flexibility needed for data development, new views of project data, ease of analysis, and ultimately, the best science possible.

It is also essential that simple and effective tools for proofing data points, data analysis, and data archival be made available to principal investigators "at their desks". Training must be provided in the use of these tools, so that investigators can be active participants in procedures designed to provide integrated views of data from multiple projects.

Specific areas for which clear needs were identified during the scope of this project include a simple PC-based GIS, methods for version control of evolving datasets, and suitable software for accessing and analyzing large databases. Investigators also were in need of technical assistance with hardware and software installation, and with the preparation of presentation materials and final reports. In some cases, it makes sense to centralize at least part of these functions, to realize economies of scale.

#### Support for Projects upon Completion

As projects close out, it is important to implement specific data management procedures that document datasets for possible use in other contexts. This is often an area where investigators have little experience, as it depends on principles of data abstraction and other esoteric concepts about internally consistent views of data entities and their attributes.

Nevertheless, properly conducted data documentation is heavily dependent on the investigator who acquired the data, as datasets very typically include internal codes, assumed units of measurement, methods for dealing with missing values and outliers, and other project specific idiosyncracies. It is most reasonable to develop this documentation as projects close-out, since this is when conclusions based on data are finalized, and the content of a database is essentially static. However, it is not unusual for a database to continue to evolve after final reports are published, especially if other programs assume responsibility for future use and updates to the data. In such cases, it is important that procedures for version control and mechanisms for providing "snapshots" of databases be carefully implemented.

An overview of detailed database documentation is included in Appendix A, with examples extracted from various databases tracked by this project.

## Conclusions and Recommendations

Baseline and assessment data are the key to determining damages and the extent of injury to resources. Similarly, data acquired through monitoring projects provide the means to prove the effectiveness of restoration programs.

Data management is not a trivial exercise, particularly if one takes seriously the need to ensure the longevity of data beyond the scope of a particular project. Though it is difficult, a balance must be struck between burdening an investigator with extensive data management procedures, and ensuring that a project's data can have utility in broader contexts after the project closes out.

Specific suggestions for improved data management are found in the discussion section of this paper. The main points are summarized here.

- Do recognize the importance of baseline data, newly acquired assessment data, and data obtained by future monitoring work in the restoration program.
- Do insist that investigators realize that the data which they collect may have utility beyond the scope of the project that originated it.
- Do take advantage of existing computer networks and data management facilities where possible.
- Do establish centralized standard basemaps and other global resources; do provide minimal guidelines for data documentation and data management; and do provide principal investigators with the support and tools to meet and utilize these centralized standards and guidelines.

- Do recognize and support the two arenas in which data must be managed: the period of time when a project is in progress and its databases are under development, and when a project closes out, and its databases must be archived and documented for possible future applications.
- Do not attempt to centralize data before its time; specifically, do not solicit and centralize data while a project is in progress.
- Do not attempt to centralize data, particularly to feed centralized projects, without providing immediate utility to the investigator who acquired the data.
- Do not expect investigators to manage their own data without providing investigators and their staff with suitable technical, hardware, and software support.
- Do not allow projects with significant datasets to close out before ensuring that adequate documentation and archival of data has taken place.

In conclusion, it is cost-effective to spend the small amount necessary to ensure that data acquired through millions of dollars worth of effort will have longevity and can be used in broader contexts. The data obtained today will very likely be the baseline data of tomorrow.

### <u>References</u>

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Fleming, C. C., and von Halle, B., Handbook of Relational Database Design, Addison-Wesley, Reading, MA (1989).

Kusler, J. A., and Kentula, Mary E., editors, Wetland Creation and Restoration, the status of the science, Island Press, Washington, D. C., (1990).

Simonson, B. P., Exxon Valdez Oil Spill and related ADF&G Historical Databases: Data Schemata, Dictionaries, and GIS Coverages, ADF&G publication (in preparation). APPENDIX A - Database Documentation: Samples and Extracts

A comprehensive set of database documentation should, wherever possible, include each of the following items. Samples from documentation created by this project for the historical harvest database and selected assessment projects are attached in this appendix. Complete sets of this documentation are in preparation for publication in a separate report.

A visual representation of the database's content, indicating the relationship of keys, records, and fields. (Figure 2)

Comprehensive lists of records and fields, detailed descriptions of record layout and field attributes, and a complete set of internal codes used in the database. (Figures 3, 4, 5, 6, and 7)

GIS Coverages and Associated Graphics . . . . . . . . . . . . A.6

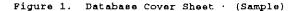
At a minimum, a simple location map indicating areas for which data is available. *(Figure 8)* 

Miscellaneous

Information on how data was sampled, including copies of data forms and procedures for acquisition and entry of data, information on update cycles and anticipated continued use of the database, and known written reports known to have made use of the data.

A.1

NRDA STUDY:	PS-30 Database Management
DATABASE NAME:	ADPAG Commercial Pisheries Fish Ticket Detail Records
WORKING FORMAT:	() RBASE () LOTUS () ASCII () SAS (X) Other: COBOL ISAM on IBN AIX RISC 6000
PERSONS RESPONSIBLE:	Granting Access: Carmine DiCostanzo Data Maintenance: Carmine DiCostanzo / Carole Smith
FILE SIZE:	As of 1993-04-22 there are 1.4 gluabytes
TOTAL POINTS: (records)	circa 12 million
RELATED DATABASES :	ADF4G Fish Ticket Codes
General descript	ion of data:
Wator or represe	database is restricted in part by Alaska Statute 16.05.815. nfativa fields:
Year, tick permit num	ntative fields: at number, ticket item number (key); catch / sale dates; CPBC
Year, tick permit num statistica code	ntative fields: at number, ticket item number (key); catch / sale dates; CPBC ber, ADP4G vessel number, species, pounds, number of fish, ADS
Year, tick permit num statistica code CODE TABLES:	ntative fields: et number, ticket item number (key); catch / sale dates; CPBC ber, ADP4G vessel number, species, pounds, number of fieh, AD9 l area, ADP4G management area, gear type, harvest type, port
Year, tick permit num statistica code CODE TABLES: YEARS:	ntative fields: et number, ticket item number (key); catch / sale dates; CPEC ber, ADP&G vessel number, species, pounds, number of fish, ADF 1 ares, ADP&G management ares, gear type, barvest type, port (X) Extensive ( ) Moderate ( ) Minimal ( ) None (X) 1989 (X) 1990 (X) 1991 (X) 1992 ( ) 1993
Year, tick permit num statistics code CODE TABLES: YRARS: GIS COMPONENT:	<pre>ntative fields: et number, ticket item number (key); catch / sale dates; CPRC bar, ADP4C vessel number, species, pounds, number of fieh, ADP 1 Area, ADP4C management area, gear type, harvest type, port (X) Extensive ( ) Moderate ( ) Minimal ( ) None (X) 1969 (X) 1990 (X) 1991 (X) 1992 ( ) 1993 (X) Other: 1969 through present ( ) none ( ) latitude/longitude (X) statistical area</pre>
Year, tick permit num statistics code CODE TABLES: YRARS: GIS COMPONENT:	<pre>ntative fields: at number, ticket item number (key); catch / sale dates; CPEC bar, ADP4G vessel number, species, pounds, number of fieh, ADP 1 area, ADP4G management area, gear type, harvest type, port (X) Extensive ( ) Moderate ( ) Minimal ( ) None (X) 1969 (X) 1990 (X) 1991 (X) 1992 ( } 1993 (X) Other: 1969 through present ( ) none ( ) latitude/longitude (X) statistical area ( ) other land/water feature: ( ) permanent archive</pre>
permit num statistica	<pre>ntative fields: et number, ticket item number (key); catch / sale dates; CPRC ber, ADP&amp;G vessel number, species, pounds, number of fieh, ADJ 1 area, ADP&amp;G management area, gear type, barvest type, port (X) Extensive ( ) Moderate ( ) Minimal ( ) None (X) 1989 (X) 1990 (X) 1991 (X) 1992 ( ) 1993 (X) Other: 1969 through present ( ) none ( ) latitude/longitude (X) statistical area ( ) other land/water feature: ( ) permanent archive (X) enapshot as of 1993-04-32 ( ) ongoing BVOS NRDA/R study</pre>
Year, tick permit num code Code TABLES: YRARS: GIS COMPONENT: STATUS:	<pre>ntative fields: et number, ticket item number (key); catch / sale dates; CPEC ber, ADP4D vessel number, species, pounds, number of fieh, ADP 1 area, ADP4D management area, gear type, barvest type, port (X) Extensive ( ) Moderate ( ) Minimal ( ) None (X) 1969 (X) 1990 (X) 1991 (X) 1992 ( ) 1993 (X) Other: 1969 through present ( ) none ( ) latitude/longitude (X) etatistical area ( ) other land/water feature: ( ) permanent archive (X) empehot as of 1993-04-22 ( ) ongoing SVOS NRDA/R study (X) otgoing research/management independent of EVOS ( ) static</pre>



This document provides a general description of the database, including size, number of records, primary fields, format, spatial and temporal extents, individuals responsible for access and content, related databases, update/modification schedules, and an indication of the extent to which internal codes are used in the database.

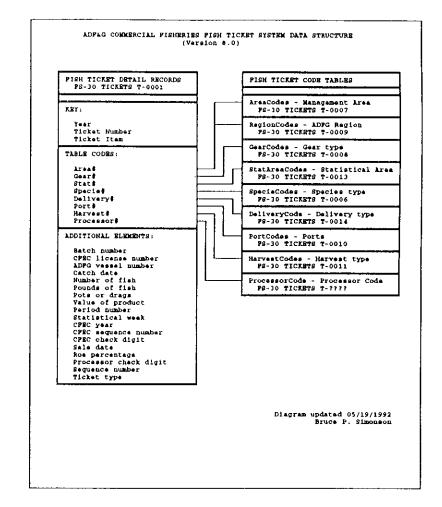


Figure 2. Database Schema - (Sample)

This document provides a visual representation of the content of the database, indicating the relationship between the tables and columns in the database, with the primary keys and cardinality associated with table linkages.

NRDA/R PROJECT:	FS-30 : Database Mar	agement			
DATABASE NAME:	ADFG CP Fish Ticket				
	TICKETS				
DATABASE DESCRIPTION:	This RBAGE system is Pieberies Pish Ticks provide an entry in provide a means of a in the Pish Tickst of ADFG commercial Pist individual fisherma: database serves as a harvest and is impo- shelfish studies. is restricted by Ala	t Database. the NRDA/R d ccessing the ystam from 4 fickst syst h landings in historical tant in most Disseminat:	It was co data dictic a extensive an RBASS en tem contain n commercia 1 record of t NRDA/R fi ion of data	onstructed ( onary, and ( code table) vironment. is records ( il fisherie) commercial sheries / from this	to to The of s. The l
TABLE ID	TABLE NAME	X REG	CORDS	AS OF	
PS-30 TICKETS T-0007	AreaCodep	U	18	04/22/1992	15:43:10
B-30 TICKETS T-0014	DeliveryCodes	U	42	04/22/1992	15:43:10
B-30 TICKETS T-0005	PisheryCodes	U	9	04/22/1992	15:43:10
PS-30 TICKETS T-0008	GearCodes	U	30	04/22/1992	15:43:10
PS-30 TICKETS T-0011	HarvestCodes	U	24	04/22/1992	15:43:10
PS-30 TICKETS T-0010	PortCodes	U	90	04/22/1992	15:43:10
PS-30 TICKETS T-0009	RegionCodes	v	4	04/22/1992	15:43:10
PS-30 TICKETS T-0006	SpecieCodes	U	192	04/22/1992	15:43:10
PS-30 TICKETS T-0013	StatkreaCodes	U	3300	04/22/1992	15:43:10
PG-JO TICKETS T-0001	Tickete	U	10982131	04/22/1992	15:43:10
PS-30 DATABASE MANAGENEN	T - NRDA/R DATA DICT				0 TICKET

Figure 3. Comprehensive Record (Table) List · (Sample)

This document is a listing of all of the tables contained in the database, and includes references to last updates to the tables and the number of records found in each table.

PB-30 TICKETS B-0029 Processorf TEKT 5 U 04/23/1992 15:43   PB-30 TICKETS B-0030 Regionian TEXT 1 U 04/23/1992 15:43   PB-30 TICKETS B-0031 Regionian TEXT 3 U 04/23/1992 15:43   PB-30 TICKETS B-0031 Regionian TEXT 3 U 04/23/1992 15:43   PB-30 TICKETS B-0031 Respersent TEXT 4 U 04/23/1992 15:43   PB-30 TICKETS B-0035 SacAvamber TEXT 2 U 04/23/1992 15:43   PB-30 TICKETS B-0036 SacAvamber TEXT 2 U 04/23/1992 15:43   PB-30 TICKETS B-0036 SacAvamber TEXT 2 U 04/23/1992 15:43   PB-30 TICKETS B-0036 SacAvamber TEXT 3 U 04/23/1992 15:43   PB-30 TICKETS B-0036 Specie TEXT 3 U 04/23/1992 15:43   PB-30 TICKETS B-0036 Specie TEXT 50 U 04/23/1992 15:43   PB-30 TICKETS B-0036 SpeciesCemmon TEXT 50 U 04/23/1992 15:43   PB-30 TICKETS B-0036 SpeciesCemmon TEXT 50 U 04/23/1992 15:43   PB-30 TICKETS B-0036 SpeciesCemmon TEXT 50 U 04/23/1992 15:43   PB-30 TICKETS B-0036 SpeciesCemmon TEXT 50 U <t< th=""><th>NRDA/R PROJECT:</th><th>FS-10 : Database Managar</th><th>nent</th><th></th><th></th><th></th></t<>	NRDA/R PROJECT:	FS-10 : Database Managar	nent			
COLUMN ID     COLUMN NAME     TYPE     X AS OF       PS-30 TICRETS B-0001     ADPG     TEXT 5     U     04/22/1992 15:43       PS-30 TICRETS B-0002     Areas     TEXT 5     U     04/22/1992 15:43       PS-10 TICRETS B-0003     Areas     TEXT 20     U     04/22/1992 15:43       PS-10 TICRETS B-0004     Batch     TEXT 1     U     04/22/1992 15:43       PS-10 TICRETS B-0005     CatchDate     TEXT 4     U     04/22/1992 15:43       PS-10 TICRETS B-0006     CFEC     TEXT 4     U     04/22/1992 15:43       PS-10 TICRETS B-0006     CFEC     TEXT 1     U     04/22/1992 15:43       PS-30 TICRETS B-0006     CFECSequenceNumber     TEXT 1     U     04/22/1992 15:43       PS-30 TICRETS B-0010     CheckCFEC     TEXT 1     U     04/22/1992 15:43       PS-30 TICRETS B-0010     CheckCFEC     TEXT 1     U     04/22/1992 15:43       PS-30 TICRETS B-0011     Daliverys     TEXT 2     U     04/22/1992 15:43       PS-30 TICRETS B-0012     ErrorPlags     TEXT 1     U     04/22/1992 15:43 <t< th=""><th></th><th></th><th></th><th></th><th></th><th></th></t<>						
PS-30 TICKETS B-0001   ADPG   TEXT   5   0   04/22/1992   15:43     PS-30 TICKETS B-0001   Area   TEXT   1   U   04/22/1992   15:43     PS-30 TICKETS B-0001   Area   TEXT   20   U   04/22/1992   15:43     PS-30 TICKETS B-0003   AreaName   TEXT   20   U   04/22/1992   15:43     PS-10 TICKETS B-0005   Catchlate   TEXT   4   U   04/22/1992   15:43     PS-30 TICKETS B-0006   CPECSequenceNumber   TEXT   2   U   04/22/1992   15:43     PS-30 TICKETS B-0006   CPECSequenceNumber   TEXT   1   U   04/22/1992   15:43     PS-30 TICKETS B-0006   CPECSequenceNumber   TEXT   1   U   04/22/1992   15:43     PS-30 TICKETS B-0010   CheckProcessor   TEXT   1   U   04/22/1992   15:43     PS-30 TICKETS B-0011   Dalvery8   TEXT   0   U   04/22/1992   15:43     PS-30 TICKETS B-0012   ErrorPlags   TEXT   0   U   04/22/1992   15:43     PS-30	COLUMN ID	COLUMN NAME	TYPE		x	<b>AS OF</b>
PS-10 TICKETS #-0004   Batch   TEXT   J   0.4/23/1992 15:43     PS-10 TICKETS #-0005   CatchDate   TEXT   4   0.4/23/1992 15:43     PS-10 TICKETS #-0005   CFEC   TEXT   4   0.4/23/1992 15:43     PS-30 TICKETS #-0006   CFEC   TEXT   1   0.4/23/1992 15:43     PS-30 TICKETS #-0007   CFEC'sequenceNumber   TEXT   2   0.4/23/1992 15:43     PS-30 TICKETS #-0006   CheckCFEC   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0010   CheckCFEC   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0010   CheckCFEC   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0011   Delivery#   TEXT   2   U   0.4/23/1992 15:43     PS-30 TICKETS #-0012   ErrorFlags   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0013   Filter01   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0015   Fibery#a   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0016   Geard   TEXT   1   U		5 DB4				04/22/1992 15.43
PS-10 TICKETS #-0004   Batch   TEXT   J   0.4/23/1992 15:43     PS-10 TICKETS #-0005   CATChDAte   TEXT   4   0.4/23/1992 15:43     PS-10 TICKETS #-0006   CFEC   TEXT   4   0.4/23/1992 15:43     PS-30 TICKETS #-0006   CFEC   TEXT   0   0.4/23/1992 15:43     PS-30 TICKETS #-0006   CFECSequenceNumber   TEXT   2   0.4/23/1992 15:43     PS-30 TICKETS #-0006   CFECSequenceNumber   TEXT   1   0.4/23/1992 15:43     PS-30 TICKETS #-0010   CheckCFEC   TEXT   1   0.4/23/1992 15:43     PS-30 TICKETS #-0010   CheckCFEC   TEXT   1   0.4/23/1992 15:43     PS-30 TICKETS #-0011   Dalivery#   TEXT   2   0.4/23/1992 15:43     PS-30 TICKETS #-0012   ErrorPlags   TEXT   1   0.4/23/1992 15:43     PS-30 TICKETS #-0013   Filter01   TEXT   1   0.4/23/1992 15:43     PS-30 TICKETS #-0014   Flebery4   TEXT   1   0.4/23/1992 15:43     PS-30 TICKETS #-0015   Flebery4   TEXT   1   0.4/22/192 15:43     PS-30 TICKETS #-0016   Gearf   TEXT <td>PC-10 PTCKB18 8-0001</td> <td>ALFG ATAAT</td> <td>TRXT</td> <td>ĩ</td> <td>ŭ</td> <td>04/22/1992 15:43</td>	PC-10 PTCKB18 8-0001	ALFG ATAAT	TRXT	ĩ	ŭ	04/22/1992 15:43
PS-10 TICKETS #-0004   Batch   TEXT   J   0.4/23/1992 15:43     PS-10 TICKETS #-0005   CatchDate   TEXT   4   0.4/23/1992 15:43     PS-10 TICKETS #-0005   CFEC   TEXT   4   0.4/23/1992 15:43     PS-30 TICKETS #-0006   CFEC   TEXT   1   0.4/23/1992 15:43     PS-30 TICKETS #-0007   CFEC'sequenceNumber   TEXT   2   0.4/23/1992 15:43     PS-30 TICKETS #-0006   CheckCFEC   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0010   CheckCFEC   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0010   CheckCFEC   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0011   Delivery#   TEXT   2   U   0.4/23/1992 15:43     PS-30 TICKETS #-0012   ErrorFlags   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0013   Filter01   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0015   Fibery#a   TEXT   1   U   0.4/23/1992 15:43     PS-30 TICKETS #-0016   Geard   TEXT   1   U	PS-10 TICKETS 8-0001	AreaName	TEXT	20	Ū	04/22/1992 15:43
PG-10   TICRETS   B-0005   CatchDate   TEXT   4   0.4/22/1992.15:43     PG-10   TICRETS   B-0007   CPECSequenceNumber   TEXT   2   0.4/22/1992.15:43     PG-10   TICRETS   B-0007   CPECSequenceNumber   TEXT   2   0.4/22/1992.15:43     PG-10   TICRETS   B-0007   CPECSequenceNumber   TEXT   1   0.4/22/1992.15:43     PG-10   TICRETS   B-0007   CheckCPEC   TEXT   1   0.4/22/1992.15:43     PG-10   TICRETS   B-0010   CheckProcessor   TEXT   1   0.4/22/1992.15:43     PG-10   TICRETS   B-0012   BrorPlage   TEXT   1   0.4/22/192.15:43     PG-10   TICRETS   B-0012   BritorPlage   TEXT   1   0.4/22/192.15:43     PG-10   TICRETS   B-0015   PisheryName   TEXT   2   0.4/22/192.15:43     PG-10   TICRETS   B-0016   Gearf   TEXT   2   0.4/22/192.15:43     PG-10   TICRETS   B-0016   Gearf   TEXT   2   0.4/22/192.15:43     PG-10	PS-10 TICERTS 8-0004	Batch	TEXT	3	Ű	04/22/1992 15:43:
PG-JO     TEXT     10     04/23/1992     15:43       PG-JO     TICKETS     B-0006     CPECSaquenceNumber     TEXT     2     04/23/1992     15:43       PG-JO     TICKETS     B-0006     CPECYsar     TEXT     2     04/23/1992     15:43       PS-JO     TICKETS     B-0006     CheckCPEC     TEXT     1     04/23/1992     15:43       PS-JO     TICKETS     B-0010     CheckCPEC     TEXT     1     04/23/1992     15:43       PS-JO     TICKETS     B-0010     CheckCPEC     TEXT     1     04/23/1992     15:43       PS-JO     TICKETS     B-0011     Delivery#     TEXT     1     04/23/1992     15:43       PS-JO     TICKETS     B-0012     ErrorPlage     TEXT     1     04/23/1992     15:43       PS-JO     TICKETS     B-0012     ErrorPlage     TEXT     1     04/23/1992     15:43       PS-JO     TICKETS     B-0015     PisheryHame     TEXT     2     04/23/1992     15:43 <tr< td=""><td>28-10 TICKETS 8-0005</td><td>CatchDate</td><td>TEXT</td><td>- i</td><td>Ū</td><td>04/22/1992 15:43:</td></tr<>	28-10 TICKETS 8-0005	CatchDate	TEXT	- i	Ū	04/22/1992 15:43:
PG-10   TICKETS B-0007   CPECYSAR   TEXT   2   0   04/22/1992   15:43     PG-10   TICKETS B-0009   CheckCPEC   TEXT   1   U   04/22/1992   15:43     PG-10   TICKETS B-0009   CheckCPEC   TEXT   1   U   04/22/1992   15:43     PG-10   TICKETS B-0010   CheckProcessor   TEXT   1   U   04/22/1992   15:43     PG-10   TICKETS B-0010   CheckProcessor   TEXT   1   U   04/22/1992   15:43     PG-10   TICKETS B-0012   DivryName   TEXT   1   U   04/22/1992   15:43     PG-10   TICKETS B-0012   PrintPlags   TEXT   1   U   04/22/1992   15:43     PG-10   TICKETS B-0015   PisheryName   TEXT   2   U   04/22/1992   15:43     PG-10   TICKETS B-0016   Garf   TEXT   2   U   04/22/1992   15:43     PG-10   TICKETS B-0017   GaarMama   TEXT   2   U   04/22/1992   15:43     PG-10   TICKETS B-0018 <t< td=""><td>PS-10 TICKETS 8-0006</td><td>CPEC</td><td>TEXT</td><td>10</td><td>U</td><td>04/22/1992 15:43</td></t<>	PS-10 TICKETS 8-0006	CPEC	TEXT	10	U	04/22/1992 15:43
PG-10     TICKETS B-0006     CPECYEAR     TEXT     2     0     04/22/1992     15:43       PG-10     TICKETS B-0010     CheckECFEC     TEXT     1     U     04/22/1992     15:43       PG-10     TICKETS B-0010     CheckEProcessor     TEXT     1     U     04/22/1992     15:43       PG-10     TICKETS B-0011     Dailvery#     TEXT     2     U     04/22/1992     15:43       PG-10     TICKETS B-0012     ErrorPlage     TEXT     0     04/22/1992     15:43       PG-10     TICKETS B-0012     ErrorPlage     TEXT     1     0     04/22/1992     15:43       PG-30     TICKETS B-0012     ErrorPlage     TEXT     1     0     04/22/1992     15:43       PG-30     TICKETS B-0015     PlaberyMane     TEXT     2     0     04/22/1992     15:43       PG-30     TICKETS B-0016     Gaarf     TEXT     2     0     04/22/1992     15:43       PG-30     TICKETS B-0018     Marvestê     TEXT     2     0 <td>PS-30 TICKSTS 8-0007</td> <td>CPECSequenceNumber</td> <td>TEXT</td> <td>2</td> <td>0</td> <td>04/22/1992 15:43:</td>	PS-30 TICKSTS 8-0007	CPECSequenceNumber	TEXT	2	0	04/22/1992 15:43:
PG-10 TICKETS H-0009   ChackCFRC   TEXT 1   U   04/22/1992 15:43     PG-10 TICKETS H-0011   Delivery#   THXT 1   U   04/22/1992 15:43     PG-10 TICKETS H-0011   Delivery#   THXT 2   U   04/22/1992 15:43     PG-10 TICKETS H-0011   Delivery#   THXT 2   U   04/22/1992 15:43     PG-10 TICKETS H-0011   PTTY Name   THXT 10   U   04/22/1992 15:43     PG-30 TICKETS H-0012   PTTOFPlags   THXT 1   U   04/22/1992 15:43     PG-30 TICKETS H-0015   Pibhery#   THXT 1   U   04/22/1992 15:43     PG-30 TICKETS H-0016   Gar#   THXT 2   U   04/22/1992 15:43     PG-30 TICKETS H-0016   Harvest   THXT 40   U   04/22/1992 15:43     PG-30 TICKETS H-0016   Harvest   THXT 40   U   04/22/1992 15:43     PG-30 TICKETS H-0018   HarvestName   THXT 45   U   04/22/1992 15:43     PG-30 TICKETS H-0019   HarvestName   THXT 45   U   04/22/1992 15:43     PG-30 TICKETS H-0019   HarvestName   THXT 45   U   04/22/1992 15:43     PG-30 TICKETS H-0019   MarimunTicket	PS-30 TICKETS B-0008	CFECYear	TRIT	2	U	04/22/1992 15:43:
PG-JO TICKETS B-0010     CheckFrocessor     TEXT     1     0.4/22/199215:43       PG-JO TICKETS B-0062     Divry Name     TEXT     2     0.4/22/199215:43       PG-JO TICKETS B-0062     Divry Name     TEXT     40     0.4/22/199215:43       PG-JO TICKETS B-0012     ErrorFlags     TEXT     40     0.4/22/199215:43       PG-JO TICKETS B-0012     ErrorFlags     TEXT     1     0.4/22/199215:43       PG-JO TICKETS B-0014     Plaberyles     TEXT     1     0.4/22/199215:43       PG-JO TICKETS B-0016     Gearé     TEXT     2     0.4/22/199215:43       PG-JO TICKETS B-0016     Gearé     TEXT     2     0.4/22/199215:43       PG-JO TICKETS B-0016     Harvesttê     TEXT     40     0.4/22/199215:43       PG-JO TICKETS B-0018     Harvesttê     TEXT     2     0.4/22/199215:43       PG-JO TICKETS B-0018     Maxissumitcket     TEXT     2     0.4/22/199215:43       PG-JO TICKETS B-0017     Maxissumitcket     TEXT     3     0.4/22/199215:43       PG-JO TICKETS B-0018     Periodf     TEXT     3	PS-30 TICKSTS B-0009	CheckCFEC	TEXT	1	U	04/22/1992 15:43:
PG-10 TICRETS B-0011   Delivery#   TEXT 2   U 04/22/199215:43     PG-10 TICRETS B-0012   Divry Name   TEXT 40   U 04/22/199215:43     PG-10 TICRETS B-0012   Divroy Name   TEXT 10   U 04/22/199215:43     PG-10 TICRETS B-0013   P114:001   TEXT 10   U 04/22/199215:43     PG-10 TICRETS B-0014   P18:010   TEXT 1   U 04/22/199215:43     PG-10 TICRETS B-0015   P18:Dery#   TEXT 2   U 04/22/199215:43     PG-10 TICRETS B-0016   Gaar#   TEXT 2   U 04/22/199215:43     PG-10 TICRETS B-0016   Harvest#   TEXT 40   U 04/22/199215:43     PG-10 TICRETS B-0018   Harvest#   TEXT 40   U 04/22/199215:43     PG-10 TICRETS B-0018   Harvest#   TEXT 40   U 04/22/199215:43     PG-10 TICRETS B-0018   Maximumfickat   TEXT 40   U 04/22/199215:43     PG-10 TICRETS B-0011   Maximumfickat   TEXT 30   U 04/22/199215:43     PG-10 TICRETS B-0012   Number   NUM 6   U 04/22/199215:43     PG-10 TICRETS B-0014   Porté   TEXT 30   U 04/22/199215:43     PG-10 TICRETS B-0017   Potté   TEXT 30   U 04/22/199215:43	PS-JO TICKETS E-0010	CheckProcessor	TRXT	1	U	04/22/1992 15:43:
PG-10 TICKETS B-0062   Dlvry.Name   TEXT 40   0 4/22/1992 15:43     PG-10 TICKETS B-0013   Piller01   TEXT 10   U 04/22/1992 15:43     PG-10 TICKETS B-0014   PisheryName   TEXT 1   U 04/22/1992 15:43     PG-10 TICKETS B-0015   PisheryName   TEXT 3   U 04/22/1992 15:43     PG-10 TICKETS B-0016   Geard   TEXT 2   U 04/22/1992 15:43     PG-10 TICKETS B-0016   Geard   TEXT 2   U 04/22/1992 15:43     PG-10 TICKETS B-0016   Geard   TEXT 2   U 04/22/1992 15:43     PG-10 TICKETS B-0016   Harvestté   TEXT 2   U 04/22/1992 15:43     PG-10 TICKETS B-0016   Harvestté   TEXT 2   U 04/22/1992 15:43     PG-10 TICKETS B-0016   Harvestté   TEXT 40   U 04/22/1992 15:43     PG-10 TICKETS B-0017   MaxisumTicket   TEXT 6   U 04/22/1992 15:43     PG-10 TICKETS B-0021   Mumber   TEXT 1   U 04/22/1992 15:43     PG-10 TICKETS B-0022   Port6   TEXT 3   U 04/22/1992 15:43     PG-10 TICKETS B-0024   Port6   TEXT 3   U 04/22/1992 15:43     PG-10 TICKETS B-0025   PortName   TEXT 3   U 04/22/1992 15:43	PS-30 TICKETS E-0011	Delivery#	TEXT	2	υ	04/22/1992 15:43:
PG-10 TICKHTS H-0012   HTrorPlags   THEXT 10   0.4/22/199215:43     PG-10 TICKHTS H-0013   Plabery4   THXT 1   0.4/22/199215:43     PG-10 TICKHTS H-0014   Plabery4   THXT 1   0.4/22/199215:43     PG-30 TICKHTS H-0015   Plabery4   THXT 1   0.4/22/199215:43     PG-30 TICKHTS H-0016   Gears   THXT 2   0.4/22/199215:43     PG-30 TICKHTS H-0016   Gears   THXT 2   0.4/22/199215:43     PG-30 TICKHTS H-0016   Harvest   THXT 4   0.04/22/199215:43     PG-30 TICKHTS H-0018   Harvest   THXT 4   0.04/22/199215:43     PG-30 TICKHTS H-0019   Harvest   THXT 5   0.04/22/199215:43     PG-30 TICKHTS H-0019   Harvest   THXT 6   0.04/22/199215:43     PG-30 TICKHTS H-0021   Mulmbar   THXT 2   0.04/22/199215:43     PG-30 TICKHTS H-0021   Mulmbar   HUN 4   0.04/22/199215:43     PG-30 TICKHTS H-0022   Period#   THXT 2   0.04/22/199215:43     PG-30 TICKHTS H-0024   Potf#   THXT 2   0.04/22/199215:43     PG-30 TICKHTS H-0025   PortMama   THXT 2   0.04/22/199215:43     PG-30 TICKHTS H-0026 <td>PS-30 TICKETS E-0062</td> <td>DIVTY_Name</td> <td>TBXT</td> <td>40</td> <td>U</td> <td>04/22/1992 15:43:</td>	PS-30 TICKETS E-0062	DIVTY_Name	TBXT	40	U	04/22/1992 15:43:
PG-30 TICKETS B-00.13   P111er01   TRXT 3   U   04/22/1992 15:43     PG-30 TICKETS B-00.14   P1ebery4   TRXT 1   U   04/22/1992 15:43     PG-30 TICKETS B-00.15   P1ebery4   TRXT 2   U   04/22/1992 15:43     PG-30 TICKETS B-00.15   GearMana   TRXT 40   U   04/22/1992 15:43     PG-30 TICKETS B-00.16   GearMana   TRXT 40   U   04/22/1992 15:43     PG-30 TICKETS B-00.18   Harvest6   TRXT 40   U   04/22/1992 15:43     PG-30 TICKETS B-00.18   Harvest6   TRXT 40   U   04/22/1992 15:43     PG-30 TICKETS B-00.18   Harvest6   TRXT 6   U   04/22/1992 15:43     PG-30 TICKETS B-00.21   MaximuTicket   TRXT 6   U   04/22/1992 15:43     PG-30 TICKETS B-00.21   Mumbar   TRXT 3   U   04/22/1992 15:43     PG-30 TICKETS B-00.22   Numbar   TRXT 3   U   04/22/1992 15:43     PG-30 TICKETS B-00.24   Porté   TRXT 3   U   04/22/1992 15:43     PG-30 TICKETS B-00.25   Porté   TRXT 3   U   04/22/1992 15:43     PG-30 TICKETS B-00.26   Porté	PS-JO TICKETS B-0012	ErrorPlage	TRXT	10	U	04/22/1992 15:43:
PG-J0 TICKETS B-0014   Pishery4   TEXT 1   U   04/22/1992 15:43     PG-J0 TICKETS B-0015   PisheryName   TEXT 2   U   04/22/1992 15:43     PG-J0 TICKETS B-0016   Gear#   TEXT 2   U   04/22/1992 15:43     PG-J0 TICKETS B-0017   GearNama   TEXT 2   U   04/22/1992 15:43     PG-J0 TICKETS B-0018   Harvest#   TEXT 2   U   04/22/1992 15:43     PG-J0 TICKETS B-0018   Harvest#   TEXT 4   U   04/22/1992 15:43     PG-J0 TICKETS B-0018   MarisumTicket   TEXT 6   U   04/22/1992 15:43     PF-J0 TICKETS B-0021   Mushar   MUM 6   U   04/22/1992 15:43     PF-J0 TICKETS B-0021   Period#   TEXT 2   U   04/22/1992 15:43     PF-J0 TICKETS B-0021   Period#   TEXT 2   U   04/22/1992 15:43     PF-J0 TICKETS B-0027   Port#   TEXT 2   U   04/22/1992 15:43     PF-J0 TICKETS B-0026   Port#Late   TEXT 2   U   04/22/1992 15:43     PF-J0 TICKETS B-0027   Pots   NUM 4   U   04/22/1992 15:43     PF-J0 TICKETS B-0028   Pounds   NUM 4	PS-30 TICKETS B-0013	Piller03	TRXT	3	U	04/22/1992 15:43:
PG-30 TICKHTG B-0015   PisheryName   TBXT 30   0 04/22/1992 15:43     PG-30 TICKHTG B-0016   Gasr#   TBXT 2   U 04/22/1992 15:43     PG-30 TICKHTG B-0017   GasrMama   TBXT 40   U 04/22/1992 15:43     PG-30 TICKHTG B-0018   Harvest#   TBXT 40   U 04/22/1992 15:43     PG-30 TICKHTG B-0018   Harvest#   TBXT 45   U 04/22/1992 15:43     PG-30 TICKHTG B-0018   Harvest#   TBXT 6   U 04/22/1992 15:43     PG-30 TICKHTG B-0019   MaximumTicket   TBXT 6   U 04/22/1992 15:43     PG-30 TICKHTG B-0011   MinmumTicket   TBXT 6   U 04/22/1992 15:43     PG-30 TICKHTG B-0021   Mumber   HUM 6   U 04/22/1992 15:43     PG-30 TICKHTG B-0021   Number   HUM 6   U 04/22/1992 15:43     PG-30 TICKHTG B-0024   Porté   TBXT 3   U 04/22/1992 15:43     PG-30 TICKHTG B-0025   PortNama   TBXT 3   U 04/22/1992 15:43     PG-30 TICKHTG B-0026   PortState   TBXT 3   U 04/22/1992 15:43     PG-30 TICKHTG B-0027   Pots   NUM 7   U 04/22/1992 15:43     PG-30 TICKHTS B-0028   PortState   TBXT 3   U 04/22/1992 15:43	PS-JO TICKETS B-0014	Fishery#	TBXT	1	U	04/22/1992 15:43:
PG-30 TICKHTS B-0016   Gearf   THXT   2   0   04/22/1992 15:43     PG-30 TICKHTS B-0017   GearMana   THXT   40   0   04/22/1992 15:43     PG-30 TICKHTS B-0018   Harvestt#   THXT   2   0   04/22/1992 15:43     PG-30 TICKHTS B-0019   Harvestt#   THXT   40   0   04/22/1992 15:43     PG-30 TICKHTS B-0019   Harvestt#   THXT   40   0   04/22/1992 15:43     PG-30 TICKHTS B-0019   Harvesth#   THXT   6   0   04/22/1992 15:43     PG-30 TICKHTS B-0021   Number   THXT   2   0   04/22/1992 15:43     PG-30 TICKHTS B-0022   Period#   THXT   3   0   04/22/1992 15:43     PG-30 TICKHTS B-0025   PertMana   THXT   3   0   04/22/1992 15:43     PG-30 TICKHTS B-0026   Potf#   THXT   3   0   04/22/1992 15:43     PG-30 TICKHTS B-0027   Pots   THXT   3   0   04/22/1992 15:43     PG-30 TICKHTS B-0028   PotsBate   THXT   1   0   04/22/1992 15:43     PG-30 TICKHTS B-0039   Proce	PS-30 TICKETS B-0015	FisheryName	TEXT	30	U	04/22/1992 15:43:
PG-10 TICKHTS B-0017   GearName   TRXT   40   0.4/22/1992 15:43     PG-10 TICKHTS B-0018   Harvestf   TRXT   2   0.4/22/1992 15:43     PG-10 TICKHTS B-0019   Harvesthame   TRXT   6   0.4/22/1992 15:43     PG-10 TICKHTS B-0010   MailmumTicket   TRXT   6   0.4/22/1992 15:43     PG-10 TICKHTS B-0021   MinimumTicket   TRXT   6   0.4/22/1992 15:43     PG-10 TICKHTS B-0021   Numbar   HOM   6   0.04/22/1992 15:43     PG-10 TICKHTS B-0021   Period?   TRXT   30   0.4/22/1992 15:43     PG-10 TICKHTS B-0024   Porté   TRXT   30   0.4/22/1992 15:43     PG-10 TICKHTS B-0025   PortName   TRXT   30   0.4/22/1992 15:43     PG-30 TICKHTS B-0026   PortState   TRXT   30   0.4/22/1992 15:43     PG-30 TICKHTS B-0027   Pots   NUM 4   0   0.4/22/1992 15:43     PG-30 TICKHTS B-0028   Pocessorf   TRXT   1   0.4/22/1992 15:43     PG-30 TICKHTS B-0018   Region8   TRXT   1   0.4/22/1992 15:43     PG-30 TICKHTS B-0018   Region8   TRXT	PS-30 TICKETS 2-0016	Gearf	TBXT	2	U	04/22/1992 15:43:
PG-30 TICKHTS B-0018   Harvestf   TRKT   1   0   04/22/1992 15:43     PG-30 TICKHTS B-0019   MaximumTickst   TRKT   45   0   04/22/1992 15:43     PG-30 TICKHTS B-0010   MaximumTickst   TRKT   6   0   04/22/1992 15:43     PG-30 TICKHTS B-0021   Number   TRKT   2   0   04/22/1992 15:43     PG-30 TICKHTS B-0021   Number   TRKT   2   0   04/22/1992 15:43     PG-30 TICKHTS B-0021   Periodf   TRKT   2   0   04/22/1992 15:43     PG-30 TICKHTS B-0024   Porté   TRKT   3   0   04/22/1992 15:43     PG-30 TICKHTS B-0025   Portkame   TRXT   2   0   04/22/1992 15:43     PG-30 TICKHTS B-0026   PortBate   TRXT   2   0   04/22/1992 15:43     PG-30 TICKHTS B-0027   Pots   NUM 4   0   0   04/22/1992 15:43     PG-30 TICKHTS B-0038   Portes   NUM 7   0   04/22/1992 15:43     PG-30 TICKHTS B-0039   Processord   TRXT   1   0   04/22/1992 15:43     PG-30 TICKHTS B-0031   RegionName	PS-JO TICKETS 8-0017	GearName	TEXT	40	U	04/32/1992 15:43:
PB-30 TICKHTS B-0019   HarvestName   TRXT   6   0   04/22/1992   15:43     PB-30 TICKHTS B-0021   MinimumTickst   TRXT   6   0   04/22/1992   15:43     PB-30 TICKHTS B-0021   MinimumTickst   TRXT   6   0   04/22/1992   15:43     PB-30 TICKHTS B-0021   Periodi   TRXT   2   0   04/22/1992   15:43     PB-30 TICKHTS B-0022   Periodi   TRXT   3   0   04/22/1992   15:43     PB-30 TICKHTS B-0025   PortName   TRXT   30   0   04/22/1992   15:43     PB-30 TICKHTS B-0026   PortName   TRXT   30   0   04/22/1992   15:43     PB-30 TICKHTS B-0026   PortName   TRXT   30   0   04/22/1992   15:43     PB-30 TICKHTS B-0026   PortState   TBXT   30   0   04/22/1992   15:43     PB-30 TICKHTS B-0027   Pots   NUM 7   0   0   04/22/1992   15:43     PB-30 TICKHTS B-0038   Region1   TRXT   1   0   04/22/1992   15:43     PB-30 TICKHTS B-0031 <td>PS-30 TICKETS E-0018</td> <td>Harveste</td> <td>TEXT</td> <td>1</td> <td>U.</td> <td>04/22/1992 15:43:</td>	PS-30 TICKETS E-0018	Harveste	TEXT	1	U.	04/22/1992 15:43:
PB-J0 TICKETS B-0030   MarinumTicket   TEXT   6   0   04/21/1992 15:43     PB-J0 TICKETS B-0031   Mumber   TEXT   6   0   04/21/1992 15:43     PB-J0 TICKETS B-0032   Number   MUM 6   0   04/21/1992 15:43     PB-J0 TICKETS B-0032   Period8   TEXT   2   0   04/21/1992 15:43     PB-J0 TICKETS B-0032   Period8   TEXT   3   0   04/21/1992 15:43     PB-J0 TICKETS B-0035   Port8   TEXT   3   0   04/22/1992 15:43     PB-J0 TICKETS B-0036   Port8   TEXT   3   0   04/22/1992 15:43     PB-J0 TICKETS B-0036   Port8   NUM 7   0   0   04/22/1992 15:43     PB-J0 TICKETS B-0037   Pots   NUM 7   0   0   04/22/1992 15:43     PB-J0 TICKETS B-0038   Porcessord   TEXT   1   0   04/22/1992 15:43     PB-J0 TICKETS B-0031   RegionName   TEXT   0   04/22/1992 15:43     PB-J0 TICKETS B-0031   RegionName   TEXT   0   04/22/1992 15:43     PB-J0 TICKETS B-0031   Salabate   TEXT   0	PS-30 TICKETS B-0019	HarvestName	TEXT	45	0	04/22/1992 15:43:
FB-30 TICKETS B-0011   Minimum Ticket   THAT   6   0   04/12/1992   15:43     FB-30 TICKETS B-0021   Period8   TEXT   2   0   04/21/1992   15:43     FB-30 TICKETS B-0021   Period8   TEXT   2   0   04/21/1992   15:43     FB-30 TICKETS B-0021   Port8   TEXT   3   0   04/21/1992   15:43     FB-30 TICKETS B-0021   Port8   TEXT   3   0   04/21/1992   15:43     FB-30 TICKETS B-0026   Port8   TEXT   2   0   04/22/1992   15:43     FB-30 TICKETS B-0027   Pots   TEXT   2   0   04/22/1992   15:43     FB-30 TICKETS B-0028   Pounds   NUN 4   0   0.4/22/1992   15:43     FB-30 TICKETS B-0030   RejonTAmme   TEXT   1   0.04/22/1992   15:43     FB-30 TICKETS B-0031   Respected   TEXT   3   0.04/22/1992   15:43     FB-30 TICKETS B-0031   Respected   TEXT   4   0.04/22/1992   15:43     FB-30 TICKETS B-0031   Salabate   TEXT   4   0.04/	PS-30 TICRETS 8-0020	Maximumficket	TEXT	6	0	04/22/1992 15:43:
PB-10 TICKHTS B-0021 Number NU	PS-10 TICKETS R-0021	MinimumTicket	TEAT			04/21/1992 15:4J:
FB-10 TICKETS B-0031   Periods   TEXT 2   0   04/21/1992 15:43     FB-10 TICKETS B-0034   Porté   TEXT 3   0   04/21/1992 15:43     FB-10 TICKETS B-0035   PortName   TEXT 2   0   04/21/1992 15:43     FB-10 TICKETS B-0036   PortName   TEXT 2   0   04/21/1992 15:43     FB-10 TICKETS B-0036   PortBlate   TEXT 2   0   04/21/1992 15:43     FB-10 TICKETS B-0037   Pots   NUM 4   0   04/22/1992 15:43     FB-10 TICKETS B-0037   Pots   NUM 4   0   04/22/1992 15:43     FB-10 TICKETS B-0030   Region5   TEXT 1   U   04/22/1992 15:43     FB-10 TICKETS B-0031   Region5   TEXT 3   U   04/22/1992 15:43     FB-10 TICKETS B-0031   Region5   TEXT 3   U   04/22/1992 15:43     FB-10 TICKETS B-0032   Salabate   TEXT 3   U   04/22/1992 15:43     FB-10 TICKETS B-0035   Special   TEXT 3   U   04/22/1992 15:43     FB-10 TICKETS B-0036   Special   TEXT 5   U   04/22/192 15:43     FB-10 TICKETS B-0036   SpecialsClantlfic   TEXT 5	PS-30 TICKETS E-0022	NUMBER	NUX C	, ,		04/22/1992 15:43:
PB-10   TICKETS   B-0012   Ports     PB-10   TICKETS   B-0025   PortState   TEXT   30   0   04/22/1992   15:43     PB-10   TICKETS   B-0035   PortState   TEXT   30   0   04/22/1992   15:43     PB-10   TICKETS   B-0037   Pots   NUM   4   0   04/22/1992   15:43     PB-10   TICKETS   B-0027   Pots   NUM   0   0   04/22/1992   15:43     PB-10   TICKETS   B-0027   Pots   NUM   0   0   04/22/1992   15:43     PB-10   TICKETS   B-0028   Poceassord   TEXT   1   0   04/22/1992   15:43     PG-10   TICKETS   B-0031   RegionName   TEXT   1   0   04/22/1992   15:43     PG-10   TICKETS   B-0031   RegionName   TEXT   1   0   04/22/1992   15:43     PG-10   TICKETS   B-0031   Salabate   TEXT   2   0   04/22/1992   15:43     PG-10   TIC	PS-30 TICKETS E-0023	Period	TEAT		ň	04/22/1992 15:43:
28-30   11CARIS   B-0036   PortState   TEXT   2   0   04/22/1992   15:43     29-30   TICKETS   B-0036   PortState   TEXT   2   0   04/22/1992   15:43     29-30   TICKETS   B-0037   Pots   NUN   4   0   04/22/1992   15:43     29-30   TICKETS   B-0037   Pots   NUN   7   0   0   04/22/1992   15:43     29-30   TICKETS   B-0037   Porcessord   TEXT   1   0   04/22/1992   15:43     29-30   TICKETS   B-0030   RegionHame   TEXT   1   0   04/22/1992   15:43     29-30   TICKETS   B-0031   RegionHame   TEXT   1   0   04/23/192   15:43     29-30   TICKETS   B-0031   Repercent   TEXT   3   0   04/23/192   15:43     29-30   TICKETS   B-0037   Spacia6   TEXT   3   0   04/23/192   15:43     29-30   TICKETS   B-0037   Spacia6   TEXT   3 <td>PS-JU TICKETS E-0024</td> <td>POILS</td> <td>7817</td> <td>30</td> <td>ö</td> <td>04/22/1992 15:43:</td>	PS-JU TICKETS E-0024	POILS	7817	30	ö	04/22/1992 15:43:
PB-10 TICKETS B-0017   POLE   NUN. 4 0 U 04/22/1992 15:43     PB-10 TICKETS B-0017   POLE   NUN 7 0 U 04/22/1992 15:43     PB-10 TICKETS B-0018   Pounds   NUN 7 0 U 04/22/1992 15:43     PB-10 TICKETS B-0018   Pounds   NUN 7 0 U 04/22/1992 15:43     PB-10 TICKETS B-0010   Region8   TEXT 1 U 04/22/1992 15:43     PB-10 TICKETS B-0011   Region8   TEXT 3 U 04/22/1992 15:43     PB-10 TICKETS B-0012   RosPercent   TEXT 3 U 04/22/1992 15:43     PB-10 TICKETS B-0013   Salabate   TEXT 4 U 04/22/1992 15:43     PB-10 TICKETS B-0015   Special   TEXT 3 U 04/22/1992 15:43     PB-10 TICKETS B-0015   Special   TEXT 3 U 04/22/1992 15:43     PB-10 TICKETS B-0016   Special   TEXT 3 U 04/22/1992 15:43     PB-10 TICKETS B-0016   Special   TEXT 5 U 04/22/1992 15:43     PB-10 TICKETS B-0016   SpecialCommon   TEXT 5 U 04/22/1992 15:43     PB-10 TICKETS B-0018   SpecialCommon   TEXT 6 U 04/22/1992 15:43     PB-10 TICKETS B-0018   Stat##   TEXT 6 U 04/22/1992 15:43     PB-10 TICKETS B-0018   Stat##   TEXT 6 U 04/22/1992 15:43     PB-10 TICKETS B-0058   TicketS   TEXT 6 U 04/22/1992 15:43	PS-30 TICKETS B-0025	Port Dt at a	TRYT	22	Ď	04/22/1992 15:43:
PB-10   TLCKBTS   B-0026   Pounds   NUK   7   0   0.04/22/1992   15:43     PB-10   TLCKBTS   B-0029   Processor#   TEXT   0   0.4/22/1992   15:43     PB-10   TLCKBTS   B-0029   Processor#   TEXT   0   0.4/22/1992   15:43     PB-10   TLCKBTS   B-0010   RegionE   TEXT   1   0.04/22/1992   15:43     PB-10   TLCKBTS   B-0010   RegionE   TEXT   1   0.04/22/1992   15:43     PB-10   TLCKBTS   B-0011   RegionE   TEXT   1   0.04/22/1992   15:43     PB-10   TLCKBTS   B-0011   RegionE   TEXT   1   0.04/22/1992   15:43     PB-10   TLCKBTS   B-0013   SalaDate   TEXT   1   0.04/22/1992   15:43     PB-10   TLCKBTS   B-0015   Speciaciacommon   TEXT   2   0.04/22/1992   15:43     PB-10   TLCKBTS   B-0015   Speciaciacommon   TEXT   50   0.04/22/1992   15:43     PB-10   TLCKBTS	P3-30 TICKETS E-0020	Pote	NTIN		Ū.	04/22/1992 15:43:
PB-10 TICKETS R-0039   Processor4   TRET 5 U 04/22/1992 15:43     PB-10 TICKETS R-0039   Processor4   TRET 1 U 04/22/1992 15:43     PB-10 TICKETS R-0030   Region8   TRET 30 U 04/22/1992 15:43     PB-10 TICKETS R-0031   Region8   TRET 30 U 04/22/1992 15:43     PB-10 TICKETS R-0031   Repercent   TRET 3 U 04/22/1992 15:43     PB-10 TICKETS R-0032   RosPercent   TRET 4 U 04/22/1992 15:43     PB-30 TICKETS R-0034   SeqNumber   TRET 2 U 04/22/1992 15:43     PB-10 TICKETS R-0035   SpecieScient1fic   TRET 50 U 04/22/1992 15:43     PB-10 TICKETS R-0036   SpecieScient1fic   TRET 50 U 04/22/1992 15:43     PB-10 TICKETS R-0036   State   TRET 50 U 04/22/1992 15:43     PB-10 TICKETS R-0036   State   TRET 50 U 04/22/1992 15:43     PB-10 TICKETS R-0036   State   TRET 50 U 04/22/1992 15:43     PB-10 TICKETS R-0036   State   TRET 50 U 04/22/1992 15:43     PB-10 TICKETS R-0056   TICKETS TICKETS R-0037   State     PB-10 TICKETS R-0056   TICKETS TICKETS R-0057   TICKETS R-0056     PB-10 TICKETS R-0056   TICKETS R-0057   TICKETS R-0058     PB-10 TICKETS R-0056   TICKETSR   U 04/22/1992 15:43	92-30 TICKATS A-002/	Bounds	NUM 7	ă	ň	04/22/1992 15:43:
PS-30     TICKHTB     B-0000     RegionB     TEXT     1     U     04/22/1992     15:43       PB-30     TICKHTB     B-0001     RegionB     TEXT     1     U     04/22/1992     15:43       PB-30     TICKHTB     B-0011     RegionB     TEXT     30     U     04/22/1992     15:43       PB-30     TICKHTB     B-0012     RooPercent     THXT     1     U     04/23/1992     15:43       PS-30     TICKHTB     B-0031     SaleDate     THXT     1     U     04/23/1992     15:43       PS-30     TICKHTB     B-0033     SaleDate     THXT     2     U     04/23/1992     15:43       PS-30     TICKHTB     B-0035     SpecieS     TEXT     50     U     04/23/192     15:43       PS-30     TICKHTB     B-0037     SpecieSCientific     TEXT     50     U     04/23/192     15:43       PS-30     TICKHTS     B-0037     Stats     TEXT     2     U     04/23/192     15:43	PR-30 TICKETS 2-0020	Processor	TRAT	š	Ŭ	04/22/1992 15:43:
PB-10 TICKETS B-0011   RegionName   TBXT   30   U   04/23/1992   15:43     PB-10 TICKETS B-0011   RosPercent   THXT   3   U   04/23/1992   15:43     PB-10 TICKETS B-0012   RosPercent   THXT   3   U   04/23/1992   15:43     PB-30 TICKETS B-0013   RalaDate   TBXT   4   U   04/23/1992   15:43     PB-30 TICKETS B-0014   SeqNumber   TBXT   2   U   04/23/1992   15:43     PG-30 TICKETS B-0014   SeqNumber   TBXT   2   U   04/23/1992   15:43     PG-30 TICKETS B-0015   Speciel   TBXT   1   U   04/23/1992   15:43     PG-30 TICKETS B-0016   SpecielCommon   TBXT   50   U   04/23/1992   15:43     PG-30 TICKETS B-0016   Stat#   TBXT   50   U   04/23/1992   15:43     PG-30 TICKETS B-0015   Stat#   TBXT   50   U   04/23/1992   15:43     PG-30 TICKETS B-0055   TicketItem   TBXT   3   U   04/23/192   15:43     PG-30 TICKETS B-0056 <td>00 10 MIOF 000 B 0010</td> <td>Region</td> <td>TRXT</td> <td>ĩ</td> <td>ŭ</td> <td>04/22/1992 15:43:</td>	00 10 MIOF 000 B 0010	Region	TRXT	ĩ	ŭ	04/22/1992 15:43:
P3-30 TICKHTS B-0032 RosPercent THXT 3 U 04/22/1992 15:43   P3-30 TICKHTS B-0031 SalaDate THXT 3 U 04/22/1992 15:43   P3-30 TICKHTS B-0031 SalaDate THXT 2 U 04/22/1992 15:43   P3-30 TICKHTS B-0035 Special THXT 2 U 04/22/1992 15:43   P3-30 TICKHTS B-0036 Special THXT 3 U 04/22/1992 15:43   P3-30 TICKHTS B-0036 Special THXT 3 U 04/22/1992 15:43   P3-30 TICKHTS B-0036 Special Common THXT 50 U 04/22/1992 15:43   P3-30 TICKHTS B-0036 Special Common THXT 6 U 04/22/1992 15:43   P3-30 TICKHTS B-0037 StatMeak THXT 2 U 04/22/1992 15:43   P3-30 TICKHTS B-0037 TicketS THXT 2 U 04/22/1992 15:43   P3-30 TICKHTS B-0057 TicketS THXT 3 U 04/22/1992 15:43   P3-30 TICKHTS B-0058 TicketType THXT 3 U 04/22/1992 15:43   P3-30 TICKHTS B-0059 TicketType THXT 1 U 04/22/1992 15:43   P3-30 TICKHTS B-0050 Value THXT 2t	RG-10 TICKETS R-0031	RegionName	TRXT	30	Ŭ	04/22/1992 15:43:
Pg-J0 TICKETS 8-0032 SalaDate TEXT 4 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0034 SeqNumber TEXT 4 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0035 Speciel TEXT 3 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0036 Speciel TEXT 3 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0036 SpecieleCommon TEXT 50 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0036 SpecieleCommon TEXT 50 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0036 State TEXT 6 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0037 SpecieSclentlfic TEXT 6 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0036 State TEXT 6 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0057 TicketS TEXT 6 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0056 TicketS TEXT 3 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0058 TicketType TEXT 3 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0059 TicketType TEXT 1 U 04/23/1992 15:43   Pg-J0 TICKETS 8-0050 Yalue TEXT 7 U 04/23/1993 15:43   Pg-J0 TICKETS 8-0050 Yalue TEXT 7 U 04/23/1993 15:43	P9-10 TICKRT9 8-0012	RoePercent	TRXT	3	Ū	04/22/1992 15:43:
PS-30     TICKHTS     B-0034     BegNumber     TEXT     2     U     04/23/1992     15:43       F8-30     TICKHTS     B-0035     Special     TEXT     3     U     04/23/1992     15:43       F8-30     TICKHTS     B-0036     SpecialCommon     TEXT     50     U     04/23/1992     15:43       F9-30     TICKHTS     B-0036     SpecialCommon     TEXT     50     U     04/23/1992     15:43       F9-30     TICKHTS     B-0036     SpecialColentific     TEXT     50     U     04/23/1992     15:43       F9-30     TICKHTS     B-0036     State     TEXT     6     U     04/23/1992     15:43       F9-30     TICKHTS     B-0037     Ticket     TEXT     4     U     04/23/1992     15:43       F9-30     TICKHTS     B-0056     TicketType     TEXT     1     U     04/23/1992     15:43       F9-30     TICKHTS     B-0055     TicketType     TEXT     1     U     04/23/1921	PS-10 TICKRTS 8-0033	SaleDate	TRXT	4	U	04/22/1992 15:43:
PG_JO TICKETS B-0015 Speciel TEXT J U 04/22/1992 15:43   PS_JO TICKETS B-0015 SpecieCommon TEXT J U 04/22/1992 15:43   PS_JO TICKETS B-0037 SpecieCommon TEXT SO U 04/22/1992 15:43   PS_JO TICKETS B-0036 State TEXT SO U 04/22/1992 15:43   PS_JO TICKETS B-0037 State TEXT SO U 04/22/1992 15:43   PS_JO TICKETS B-0038 State TEXT SO U 04/22/1992 15:43   PS_JO TICKETS B-0057 TicketS TEXT SO U 04/22/1992 15:43   PS_JO TICKETS B-0056 TicketS TEXT SO U 04/22/1992 15:43   PS_JO TICKETS B-0055 TicketS TEXT SO U 04/22/1992 15:43   PS_JO TICKETS B-0056 TicketType TEXT SO U 04/22/1992 15:43   PS_JO TICKETS B-0050 V V 04/22/1992 15:43 15:43   PS_JO TICKETS B-0050 V V U 04/22/1992 15:43   PS_JO TICKETS B-0050 V V U 04/22/1992 15:43   PS_JO TICKETS B-0051 Year TEXT 7 U 04/22/1992 15:43   PS_JO TICKETS B-0051 Year TEXT 2 U 04/22/1992 15:43	F9-30 TICKETS 8-0034	Sechumber	TRXT	2	U	04/22/1992 15:43:
PS-10     TICKETS     B-0016     SpecieCommon     TEXT     50     U     04/22/1992     15:43       PB-10     TICKETS     B-0017     SpecieCommon     TEXT     50     U     04/22/1992     15:43       PB-10     TICKETS     B-0016     State     TEXT     6     U     04/22/1992     15:43       PS-10     TICKETS     B-0016     State     TEXT     6     U     04/22/1992     15:43       PS-10     TICKETS     B-0036     State     TEXT     2     U     04/22/1992     15:43       PS-10     TICKETS     B-0037     TICKETS     TEXT     6     U     04/22/1992     15:43       PS-10     TICKETS     B-0056     TICKETIS     TEXT     3     U     04/22/1992     15:43       PS-10     TICKETS     B-0059     TICKETIS     TEXT     1     U     04/22/1992     15:43       PS-10     TICKETS     B-0061     Year     TEXT     2     04/22/1992     15:43	PS-10 TICKETS B-0015	Speciel	TRXT	э	U	04/22/1992 15:43:
Pg-JO TICKHTS 8-0037     SpeciesClentific     TEXT     50     U     04/22/1992     15:43       Pg-JO TICKHTS 8-0036     Stat8     TEXT     6     U     04/22/1992     15:43       Pg-JO TICKHTS 8-0039     Stat8     TEXT     2     U     04/22/1992     15:43       Pg-JO TICKHTS 8-0059     StatMeak     TEXT     2     U     04/22/1992     15:43       Pg-JO TICKHTS 8-0057     Ticket8     TEXT     0     04/22/1992     15:43       Pg-JO TICKHTS 8-0056     Ticket16     TEXT     3     U     04/22/1992     15:43       Pg-JO TICKHTS 8-0058     TicketType     TEXT     3     U     04/22/1992     15:43       Pg-JO TICKHTS 8-0050     TicketType     TEXT     1     U     04/22/1992     15:43       Pg-JO TICKHTS 8-0060     Value     TEXT     7     U     04/22/1992     15:43       Fg-JO TICKHTS 8-0061     Year     TEXT     2     U     04/22/1992     15:43	PS-10 TICARTS B-0016	SpecisCommon	TRAT	50	U	04/22/1992 15:43:
PB-J0     TICKETS     B-0018     Stats     TEXT     6     U     04/22/1992     15:43       FB-J0     TICKETS     B-0039     StatMack     TBXT     2     U     04/22/1992     15:43       FB-J0     TICKETS     B-0057     TICKETS     TEXT     6     U     04/22/1992     15:43       FB-J0     TICKETS     B-0057     TICKETS     TICKETS     U     04/22/1992     15:43       FB-J0     TICKETS     B-0056     TICKETS     TEXT     1     U     04/22/1992     15:43       FB-J0     TICKETS     B-0050     TICKETS     TICKETS     U     04/22/1992     15:43       FB-J0     TICKETS     B-0060     Value     TEXT     7     U     04/22/1992     15:43       FB-J0     TICKETS     B-0061     Year     TEXT     2     0     04/22/1992     15:43	PS-10 TICKETS 8-0037	SpecieScientific	TRXT	50	U	04/22/1992 15:43:
PS-J0 TICKETS 8-0039     StatWeek     TEXT     2     0.4/22/1992.15:43       PS-J0 TICKETS 8-0050     TicketS     TBXT     6     0.4/22/1992.15:43       PS-J0 TICKETS 8-0056     TicketItam     TBXT     3     0.04/22/1992.15:43       PS-J0 TICKETS 8-0055     TicketType     TBXT     1     0.4/22/1992.15:43       PS-J0 TICKETS 8-0055     TicketType     TBXT     1     0.4/22/1992.15:43       PS-J0 TICKETS 8-0050     Value     TBXT     1     0.4/22/1992.15:43       PS-J0 TICKETS 8-0050     Value     TBXT     2     0.4/22/1992.15:43       PS-J0 TICKETS 8-0050     Value     TBXT     2     0.4/22/1992.15:43       PS-J0 TICKETS 8-0051     Year     TBXT     2     0.4/22/1992.15:43	PB-JO TICKETS R-0016	Btat#	TEXT	6	v	04/22/1992 15:4]:
PS-J0 TICKETS B-0057     TicketS     TEXT     6     U     04/22/1992     15:43       PS-J0 TICKETS B-0056     TicketIten     TBXT     J     U     04/22/1992     15:43       PS-J0 TICKETS B-0057     TicketType     TEXT     J     U     04/22/1992     15:43       PS-J0 TICKETS B-0050     Value     TEXT     J     04/22/1992     15:43       PS-J0 TICKETS B-0060     Value     TEXT     V     04/22/1992     15:43       FS-J0 TICKETS B-0061     Year     TEXT     V     04/22/1992     15:43	FS-JO TICKETS 8-0039	StatWeek	TRXT	2	v	04/22/1992 15:43:
Pg-J0 TICKETS B-0056     TicketLtam     TEXT     J     U     04/22/1992     15:43       Pg-J0 TICKETS B-0059     TicketType     TEXT     J     U     04/22/1992     15:43       Pg-J0 TICKETS B-0060     Value     TEXT     7     U     04/22/1992     15:43       Pg-J0 TICKETS B-0061     Year     TEXT     2     04/22/1992     15:43	FS-JO TICKETS E-0057	Ticket	THXT	6	U	04/22/1992 15:43:
FS-30 TICKETS 8-0059     TicketType     TEXT     1     U     04/22/1992     15:43       FS-30 TICKETS 8-0060     Value     TEXT     7     U     04/22/1992     15:43       FS-30 TICKETS 8-0061     Year     TEXT     2     U     04/22/1992     15:43	PS-30 TICKETS B-0056	TicketItem	TEXT	3	U	04/22/1992 15:43
PS-JO TICKETS 2-0060     Value     TEXT     7     U     04/32/1992     15:43       FS-JO TICKETS 2-0061     Year     TEXT     2     0.4/22/1992     15:43	FS-30 TICKETS 8-0059	TicketType	TEXT	1	υ	04/22/1992 15:43:
FS-30 TICKETS E-0061 Year TEXT 2 U 04/22/1992 15:43	PB-JU TICKATA M-0060	Value	TRXT	7	U	04/22/1992 15:43
	PS-30 TICKETS B-0061	Year	TEXT	2	U	04/22/1992 15:43:

Figure 4. Comprehensive Field (Column) List · (Sample)

This document lists all of the fields found in the database, along with fundamental attributes (internal storage format) and last update status.

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	NRDA/R DATABASE TABLE / RECORD DATA DEFIN	
RDA/R PROJECT:	98-30 : Database Management	
	ADFG CP Fish Ticket database; skeleton RE	
	TICKETS	
RABLE / RECORD ID:	Tickets (PS-30 TICKETS T-0001)	
BRIEF DESCRIPTION:	ADPG CP Fish Tickets	
DESCRIPTION	This table contains the detail records of items. The unique key for a fish ticket as the combined Year, Ticket Number, and	itam record is defined
15 OF	04/22/1992 15:43:10 NUMBER OF RECORDS: 10	962121
TABLE CREATED IN DD	04/16/1992 12:21:47 READ/NODIPY PEWDS: Y	/ Y
LAST ACTION IN DD	04/22/1992 15:43:19 Updata	
LEN BLEMENT NAME A	ID ID# RLEMENT DESCRIPTION	TYPE ID
1 Aread	Management Area code	TEXT 1 .
PS-30 TICKETS : 2 Batch PS-30 TICKETS :	Batch number of ticket	TRXT )
J Year	Year of ticket	TRIT 3 .
PS-30 TICKETS   4 Tickets	Ticket number	TRXT 6 .
F9-J0 TICKETS   5 TicketItem	Item number of record on tick	et TEXT 3
FS-JO TICKETS 1 6 CPEC	CPEC license number	TEXT 10
FS-30 TICKETS ) 7 ADFG	ADFG vessel number	TEXT 5
PB-DO TICKETS 1 5 Processor#	Processor code	TBXT 5
PB-JO TICKETS 1 9 Gaar#	Pish Ticket Gear code	TRAT 2 .
PS-30 TICKETS 1 10 CatchDate	t-0016 Catch date	TBXT 4
PS-30 TICARTS 1 11 State	R-0005 AK CP Statistical Area	TRIT 6
PB-JO TICKETS 1 12 Filler03		TEXT )
PS-JO TICKETS J		TBXT J ·
PS-JO TICKETS   14 Number		
PS-30 TICKETS	2-0022	
15 Pounds	Pounds of fish/shellfish deli	vered NUM 7 0

Figure 5. Detailed Record (Table) Layout - (Sample)

This document provides a detailed view of a record in the database. There should be one of these documents for each table in the database. In addition to showing the constituent fields in a record, this document indicates record counts and information on update / modification activity.

LEM BLEMENT NAME AND ID	BLEMENT DESCRIPTION	TYPE	11
16 Pote PS-J0 TICKETS 8-0027	Number of pots/drags used/made	NUX 4	
17 Value PS-30 TICKETS E-0060	Value of product (whole dollars)	TEXT	7
16 BrrorPlage PS-30 TICKETS E-0012	Internal system error flags	TBXT	10
19 Periods PS-J0 TICRETS 2-002J	Period code	TBIT	2
20 StatMeek PS-30 TICKETS E-0039	Statistical week	TRIT	2
21 CPECYear PE-30 TICKETS E-0008	CFEC Year	TBIT	2
22 CFECSequenceNumber PS-30 TICERTS E-0007	CFBC sequence number	TEXT	2
21 ChackCFEC PS-30 TICKETS B-0009	CFEC check digit	TRIT	1
24 SalaData PS-J0 TICKRTS R-0031	Sale date	TEXT	4
25 Delivery# PS-30 TICKETS E-0011	Delivery code	TEXT	2
26 RosPercent PS-30 TICKETS E-0032	Ros percentage	TRXT	э
27 Ports PS-30 TICKETS E-0024	Port code designating delivery site	TRET	3
28 CheckProcessor FS-30 TICKETS E-0010	Processor chack digit	TRIT	1
29 SegNumber PS-30 TICKETS E-0034	Sequence number	TBXT	2
JO Harvest# PS-30 TICKETS E-0018	Fish ficket Harvest code	TBXT	
31 TicketType PS-30 TICKETS B-0059	Ticket type	TRAT	1
- 30 DATABASE MANAGEMENT - N	RDA/R DATA DICTIONARY TABLE - PS-30	) TICKNTS	T-00

		ABASE COLUMN / ELEMENT DEFINITION	
RDA/R PROJECTI	<b>FS-30 : Da</b>	Labase Management	
ATABASE NAME:	ADFG CF F1	eh Ticket database; skeleton RBASE d	ata structure
	TICKETS		
	Fishery# (	FS-30 TICKETS E-0014)	
RIBF DESCRIPTION:	Fisheries	type	
DESCRIPTION	This code example, a	provides a super-grouping of specie 11 the codes corresponding to salwoi 13 data sntry as part of the data va used during data reporting to sele	11dation process.
LAST EXTRACT	04/22/199	1 15:43:10	
COLUMN ADDED TO DD	04/16/199	13:21:47 LAST ACTION IN DD: 05/22/	1992 15:22:31 Update
TYPE / SIZE	TEXT 1		
FORMAT	: 9	ALIGN: L PILL: BODO	
		NULLS: not allowed	
		in this field must exist in the Fis	ibery Code table.
DATA SOURCE			
TABLE NAME AND ID		TABLE DESCRIPTION	X ID
FisheryCodes VS-JO TICKETS T-000		ADFG CF Fish Ticket Fishery Codes	υ • υ
SpecieCodes FS-30 TICKETS T-000	06	ADFG CF Species codes	U
		RDA/R DATA ELEMENT -	PS-10 TICKETS B-001

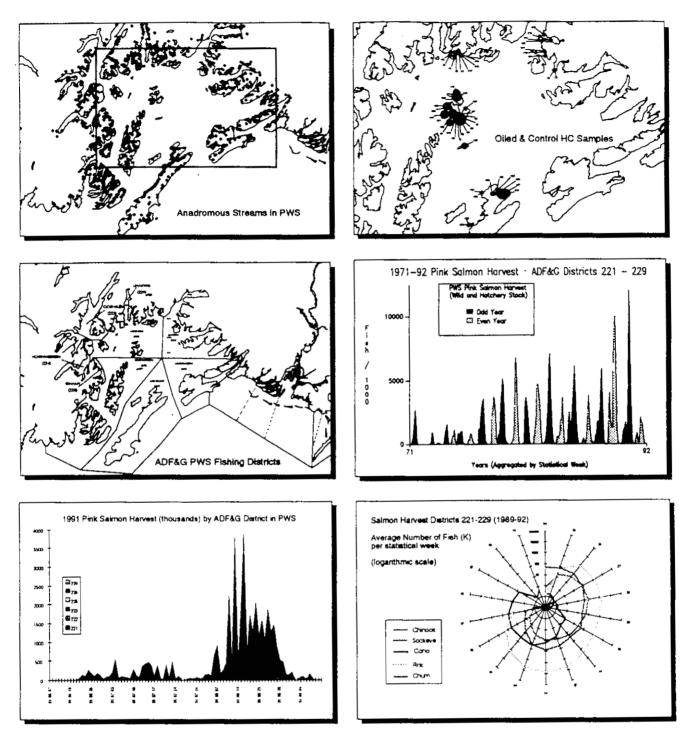
Figure 6. Detailed Field (Column) Description - (Sample)

This document provides a detailed description of a field (column) in the database. There should be one of these documents for each field in the database. This document provides detailed information about internal storage of this data element, units assigned, null values, validation rules, and information on the update / modification cycle.

PLOE 1 05/19/1992 8:13:06 FISH TICKET SPECIE CODE TABLE -- BY COMMON NAME ..... COMMON NAME -- SPECIE# -- SCIENTIFIC NAME -----660 HALIOTOE KANTSCHATKANA ABALONE 521 GALVELINUS ALPINUS ARCTIC CHAR (ANADRONOUS) 520 BALVELINUS ALPINUS ARCTIC CHAR (GENERAL) ARCTIC CHAR (NONANADROMOUS) 512 BALVELINUS ALPINUS 630 DALLIA PECTORALIS BLACKFICH 855 MYTILUS HUULIS BLUE MUSSEL 855 MITILUS ADUIS 590 LOTA LOTA 810 SATIDONUS GIGANTEUS 820 CLINOCARDIUM NUTTALLI BURBOT CLAM, BUTTER CLAN, COCKLE CLAN, EASTERN SOFTSHELL CLAN, GENERAL (DEADLOSS) 842 449 815 PAROPE GENEROSA CLAN, GEODUCK 840 PROTOTHACA STANINEA CLAN, LITTLE-NECK CLAN, RAZOR AND SILIQUA PATULA 612 SPISULA SOLIDISSINA CLAR, SURF 260 ANTIMORA ROSTRATA COD, LONGFIN COD, PACIFIC (GRAY) 110 GADUS MACROCEPHALUS 899 GENUE CORALLIUM 922 PARALITHODES PLATYPUS CORAL CRAB, BLUE KING 917 PARALITHODES PLATIPUS CRAB, BLUE KING (DEADLOSS) 900 LOPHOLITHODES KANDTII & LOPHOLITHODES CRAB. BOX PORANTNATUS 909 CRAB, BOX (DEADLOSS) CRAB, BROWN KING 923 LITHODES ABQUISPINA 926 LITHODES ABQUISPINA CRAB, BROWN KING (DEADLOSS) 910 CANCER MAGISTER CRAB, DUNGENESS 919 CANCER MAGISTER CRAB, DUNGENESS (DEADLOSS) 920 GENUS LITHODES AND GENUS PARALITHOD 929 GENUS LITHODES AND GENUS PARALITHON CRAB, KING (GENERAL) CRAB, KING (GENERAL, DEADLOSS) 940 BRINACRUS ISEMBECKII CRAB, KOREAN HORSEHAIR CRAB, KOREAN HORSEHAIR (DEADLOSS) 949 BRIMACRUS ISEMBECKII 921 PARALITHODES CANTECHATICA CRAB, RED KING 926 PARALITHODES CANTECHATICA CRAB, RED KING (DEADLOSS) 924 LITHODES COURSI 925 LITHODES COURSI CRAB, SCARLET KING CRAB, SCARLET KING (DEADLOSS) 931 CHIONOBCTES BAIRDI CRAB, TANNER (BAIRDI) 937 CHIONOBCTES BAIRDI CRAB, TANNER (BAIRDI, DEADLOSS) 930 GENUS CHIONOECTES CRAB, TANNER (GENERAL) 939 GENUS CHIONOECTES CRAB, TANNER (GENERAL, DEADLOSS) 932 CHIONOBCTES OPILIO 938 CHIONOBCTES OPILIO CRAB. TANNER (OPILIO) CRAB, TANNER (OPILIO, DEADLOSS) DEEPWATER FLATFICH 118 531 SALVELINUS MALMA DOLLY VARDEN (ANADRONOUS) 530 SALVELINUS MALWA DOLLY VARDEN (GENERAL) 532 SALVELINUS MALMA DOLLY VARDEN (NONANADRONOUS) 210 MULTIPLE FAMILIES 133 PLAICEPLEURONECTES QUADRITUBERCULATUS BELS OR EEL-LIKE FISH FLOUNDER, ALASKA PLAICE PLOUNDER, ARROWTOOTH 121 ATHERESTHES STONIAS 120 FAMILY PLEURONECTIDAE FLOUNDER, GENERAL 129 PLATICHTHYS STELLATUS PLOUNDER, STARRY 610 THTHALLUS ARCTICUS 193 PLEUROGRAMMUS KONOPYRTYGIUS OBLYL.TNG GREENLING, ATKA MACKEREL 190 GENUS HEXAGRANNOS 194 HEXAGRANNUS DECAGRANNUS GREENLING, GENERAL GREENLING, KELP

Figure 7. Database Code Definition · (Sample)

This document provides a comprehensive definition of codes contained in the database, and the rules for interpretting these internal codes. A document of these codes should be provided for each code table in the database, and mechanisms should be provided for obtaining cross-references for these codes (by code and/or by interpretation).





From left to right, top to bottom: (a) a plot of anadromous streams in PNS, taken directly from an electronic spreadsheet; (b) the same plot, zoomed in, with scaled dots indicating the hydrocarbon content in oiled and control samples (plotted directly from a PC database); (c) ADF4G districts in PNS, serving as a basemap; (d) historical harvest data, spanning multiple years, tied to ADF4G fishing districts in PNS; (e) a season's worth of historical data, by district; and (f) a harvest timing rose, showing average catch by statistical week in PNS.

These graphics are representative of mapping coverages (GIS) and software tools which should be available at the desktops of investigators as they acquire and proof data. It is important that the tools selected be affordable, and easy to use (which is not always the case with GIS technology). Investigators should be provided with standardized basemaps, so that data points in separate coverages can be proofed with the possibility for future integration.

#### APPENDIX B - ADF&G Historical Harvest Database

The ADF&G Division of Commercial Fisheries maintains a centralized database of historical harvest records for some 200 species of fish and shellfish. The twenty years of information in this database form a component of many ADF&G management and research activities, and are also important to many of the studies conducted as part of the *Exxon Valdez* oil spill.

Not all databases should be centralized; however, this harvest database and other historical and baseline databases are typical of the information for which centralized systems are appropriate. If a centralized database of information is to be of any real value, a number of basic issues must be addressed.

- (1) Procedures must be implemented which ensure timely and accurate updates to centralized data.
- (2) The data must be accessible to end-users, particularly those who are responsible for the acquisition and proofing of raw data.
- (3) The database must be flexible, providing access to data in a variety of electronic and printed formats.
- (4) Access to the data must be as transparent and efficient as possible; preferably access is automated and requires no intervention by technical support staff.

In the case of the harvest information, procedures for maintaining the centralized database have been in place for many years. Because of the increased demand for this data, the additional items in the above list received special attention and were enhanced as part of the database management project.

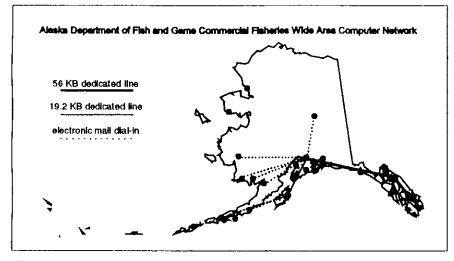
ADF&G Commercial Fisheries Statewide Computer Network . . . B.2

Statewide access to harvest data is possible over the commercial fisheries computer network that extends to all regional offices of the ADF&G. (Figure 1)

Flexibility of Report Requests and Output Formats . . . . B.2

A special user interface allows access to harvest data across each of its dozen dimensions; output is provided in a variety of electronic and printed forms. (Figure 2)

Automated, unattended access to reports and data extracts of harvest data is available on the ADF&G Commercial Fisheries Computer Wide Area Network. (Figure 3)



ADF&G Historical Fishery Harvest Database

Figure 1. ADF&G Commercial Fisheries Statewide Computer Network

ADF4G's Division of Commercial Fisheries maintains a wide area computer network that connects the division's computer resources through electronic mail, client-server database applications, and local area file servers. This network is the backbone for electronic transfer of computer files and data within the division.

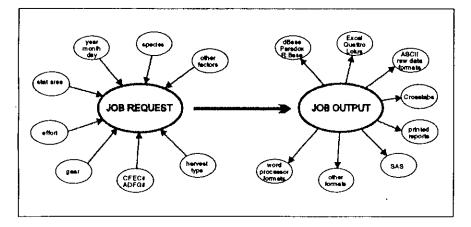


Figure 2. ADF4G Historical Fishery Harvest Database

Twenty years of fishery harvest information is stored in this centralized database. Users may request data extracts and reports that incorporate a large number of parameters, and obtain output customized for a variety of software packages and printers.

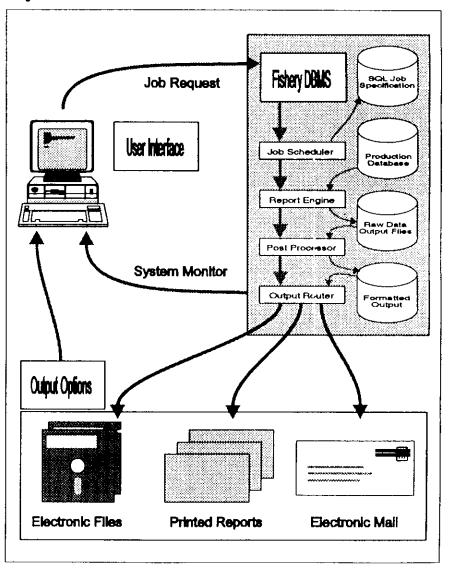


Figure 3. Automated Access to Historical Fishery Data

This user interface has been designed to allow remote access to fishery harvest data; turnaround is automatic, and generally occurs in a matter of minutes. Users may track the status of requests in progress, and resubmit previous report requests as required.