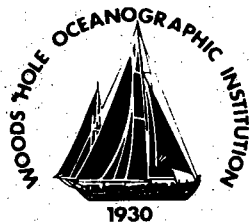


Woods Hole Oceanographic Institution



Documentation for the CETACEA Database of Marine Mammal Literature References

Revised by

William A. Watkins, Mary Ann Daher, and Nancy J. Haley

June 1990

Technical Report

Funding was provided by the Office of Naval Research
under Contract Number N00014-88-K-0273

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Woods Hole Oceanographic Institution
Woods Hole, Massachusetts 02543

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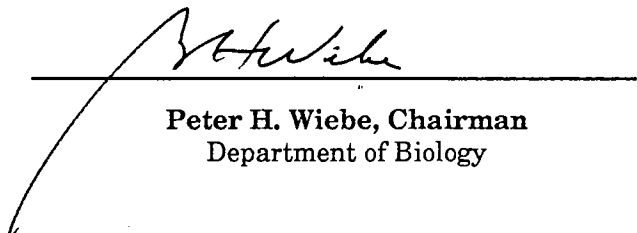
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Peter H. Wiebe, Chairman
Department of Biology





CETACEA Reference Database

ABSTRACT

This documentation for the CETACEA database of marine mammal literature references updates and expands the original work by Watkins, Bird, Moore, and Tyack 1988 (Reference Database Marine Mammal Literature, Technical Report WHOI-88-2). The CETACEA database is a comprehensive index of literature references used to file, store, search, retrieve, and format the data on marine animals. Organization of the references is complementary to features developed by William E. Schevill for his library of older cetacean literature, having direct association of species with over 300 indexed subjects, and with observation dates, locations, etc. This documentation describes the operation of the database (3600 records), including indexing, sorting, and retrieval information developed through continued use of these systems. SPECIES and SUBJECT HEADING lists with their codes have been updated. Other databases have also developed around these indexing and sorting strategies to complement the CETACEA database, including databases of animal sounds for both the recording data and the acoustic spectral information stored in libraries of digital sound cuts.

CETACEA Reference Database

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CETACEA Reference Database

INTRODUCTION --

The Marine Mammal Reference Database has been organized to create a flexible and searchable compilation of marine mammal literature references. This CETACEA database was designed to be complementary to the features developed by W. E. Schevill for his collection of the older cetacean literature. The database has evolved with use and continues to grow (now more than 3600 records). It is a comprehensively indexed and sorted reference database, simple and easily searched. It features direct association of species to indexed subjects, with every component or alphanumeric entry in the record available for searching by a wide variety of simple and complex strategies. The database is used with PC computers (IBM compatible), and its current operating system is based on an adaptation of INMAGIC software (INMAGIC Inc., Cambridge, MA).

The CETACEA Database (1) permits records of any length, (2) uses up to 75 field categories, (3) provides for unlimited numbers of defined subfields, (4) indexes and sorts fields and subfields, (5) indexes as each data record is entered, (6) allows independent sorting and retrieval of each of the fields or subfields, (7) supports search strategies developed with Boolean operators (and, or, not) and nested arguments, (8) uses searches with qualifiers (greater than, less than, equal to, from/to), (9) provides for convenient right-hand truncation in search statements, (10) saves and combines search results, (11) allows use with user-defined formats for display or reordering of data, (12) prints any number of selected records in any of these formats, (13) lists any of the indexed terms or fields and subfields with their frequency of occurrence, (14) permits the use of extended characters in printing records, (15) provides for the development of flexible on-line thesaurus of terms, search operators, and definitions for help in searching the records, (16) permits rapid copying of data records to standard ASCII files (for use with other databases, or manipulation with word processing programs), and (17) allows importation of ASCII records created elsewhere. With more than 3600 records in the current database, searching and retrieval of records is rapid, usually less than a second. Records are indexed by more than 300 subjects, 150 species categories, and a variety of other indexed notations including dates, locations, sound spectral characteristics, environmental observations, etc.,

CETACEA Reference Database

The CETACEA Reference Database for marine mammal literature may be searched by any combination of indexed or unindexed alphanumeric notations. Detailed searches may be made using author, editor, year, journal, type of publication, language, genus/species (searchable by order/suborder and family as well), major subject, subject, picture, geographic locations (including area names and latitude/longitude), as well as the location of the document. A unique feature of the database is the direct connection between species and all other indices in the database, including subjects, locations, observation dates, notes, etc. Searching may use any combination of terms and text words or even stems of words or partial phrases and parts of any alphanumeric entry. In addition, codes have been adapted for ease in identifying and searching species, subjects, journals, languages, and geographic areas. These codes may be used separately or in connection with the associated terms and text to provide intimate association of species with any other subject or term.

ACKNOWLEDGEMENTS --

The model for organization of the CETACEA database was by William E. Schevill. Comparisons and assessments of data management software suitable to this arrangement of literature references was largely by Karen E. Moore. The early adaptation of the reference database requirements to INMAGIC programs was mostly by James E. Bird, and he has continued to contribute to reference entries in the database. Barbara E. Rosenheck worked on many of the original database entries. Peter L. Tyack has provided general oversight of computer handling of data and program interactions. Data control software innovations have been by Kurt M. Fristrup. William A. Watkins has been responsible for database formats, compilation, and general documentation. Nancy J. Haley has added considerably to these reference data, and assisted in this compilation, and Mary Ann Daher has assumed the responsibility for oversight of the data organization and recording of the CETACEA database. Researchers from other areas, such as Giuseppe Notarbartolo di Sciara of Milano, Italy have also participated in the continuing development and enlargement of the database.

Funding for the beginning components of the CETACEA Database was from the Woods Hole Oceanographic Institution for laboratory support, the Marine Mammal Commission (MM4465702-4) for INMAGIC software and added computer memory, and the National Marine Fisheries Service (40EANF702277) for work on beginning database entries. Subsequent continuing support has been through general laboratory funding for studies of marine animal bioacoustics. These systems and data structures have been refined and extended for use with a variety of related recording and acoustic databases with ONR support (N00014-88-K-0273).

CETACEA Reference Database

EQUIPMENT REQUIREMENTS --

The Reference Database has been configured for convenient use in the marine animal bioacoustics laboratory of the Woods Hole Oceanographic Institution with PC-based systems. However, the INMAGIC software (INMAGIC INC, 2067 Massachusetts Ave., Cambridge, MA 02140-1338) is available for a considerable range of computers, from Wang PC to DEC VAX.

We use the following arrangement:

(1) IBM compatible PC computers. Our current arrangements utilize a variety of computers with 20-MByte or larger hard disks, including Compaq, NEC, Zenith, Sunnyvale, and Dell systems.

(2) Data structure based on INMAGIC 7.1 and 7.2 software (INMAGIC INC). INMAGIC requires DOS 2.0 or higher, and occupies about 450,000 Bytes of disk space.

(3) CETACEA data records for the database. The database includes three related files including structure, index, and data. The 12-MByte size of the current database limits its use to systems with at least this memory, but smaller components of the data on floppy disks, such as for individual species, are easily used on systems with only two floppy-disk drives.

(4) A printer is used to print references, search results, and formatted compilations of database entries as desired. A dot matrix or "laser" printer is needed for use with extended characters.

CETACEA Reference Database

START USING THE DATABASE --

Two forms of the INMAGIC program used to index and sort the data are currently in use at WHOI with the Reference Database: one for a computer with a hard disk containing much or all of the database, and a second with the program installed on dual floppy disks and working with smaller numbers of references.

HARD DISK:

- (1) Bring up the INMAGIC directory, and enter the database program by typing INMAGIC.

FLOPPY DISKS:

- (1) Insert INMAGIC System Disk (#1 Boot) into drive A, and INMAGIC Program Disk (#2 Program) into drive B. Turn on computer -- both disks will be loaded into the computer. The #1 System disk will remain in drive A, but after it is loaded, remove #2 Program disk from drive B and replace with the Data disk containing record files (CETACEA1, for example).

- (2) Choose SELECT from the INMAGIC Main Menu for searching the database, selecting references, and printing selections.

Or -- Choose MAINTAIN from the Main Menu for work within the database to edit or add to the records.

- (3) When requested, type the current filename to enter the database (for example -- CETACEA1, or B:CETACEA1 for floppies). The temporary work file may have any name, up to 8 characters, and with floppies, it will reside in limited space on the #1 disk in A drive.
- (4) To leave the current work from SELECT, type E (exit) and [RET]. From MAINTAIN, type [Ctrl/C] [RET] to abandon any changes, and return to a menu, or to save the work that has been changed or added, press the [F2] key. For exit from menus, type E (exit) and [RET].
- (5) CAUTION: ALWAYS RETURN TO A MENU BEFORE LEAVING INMAGIC -- otherwise, the database could be harmed.

CETACEA Reference Database

To return to the database from DOS, repeat the process, indicating the drive (path) and program as needed. For use with floppy disks: put #1 System disk in drive A and #2 Program disk in drive B, and then type B:INMAGIC. At the Main Menu, replace #2 Program disk in drive B with the Data disk, and when requested, type the filename (such as, B:CETACEA1) to access the database.

For work within the Reference Database, choose MAINTAIN at the Main Menu. Then, to add new records or modify existing records, choose COMPOSE from the MAINTAIN menu. The retrieval code (record number, RECNO) will identify the record to be modified, or number of a new record to be entered. The current record or a blank new record format will be displayed, with all field names indicated in appropriate order. Entry of changes or of new data is straight forward (refer to INMAGIC program manual for details of editor functions, etc.)

Entries may be made in the database at each field prompt (preassigned and named by the Data Structure: CITA, YEAR, AUTHOR, EDITOR, etc.). The line of text being entered will automatically wrap to the next line within fields. Subfields are easily added with the use of the F10 key which assigns a new line and subfield number. Subfields accommodate different search terms that need to be indexed, such as for records containing more than one author (or editor, genus/species, subject, geographic location, etc.). Indexed fields that repeat components of the complete citation allow rearrangement of the citation for different printed formats as well as providing for searches for these fields. For example, the first author is entered in the AUTHOR/1 subfield (label AU/1), second author in the AUTHOR/2 subfield, third in the AUTHOR/3 subfield, etc. Movement to other fields is by the [RET] key or by the arrow keys, with conventional cursor movement. Deletions are by the [DEL] key. Changes or additions can be repeated as often as desired. The completed record is saved by the [F2] key, and INMAGIC indexes and sorts the data as the record is added to the Reference Database.

The date is changed (using [F6] key) in the DATE field after changes to any record. This is an indexed field which permits keeping track of the modifications to the database.

CETACEA Reference Database

SEARCHING THE DATABASE --

There are relatively simple ways to find any alphanumeric notation in any portion of a literature reference in the database. The most rapid searches are of the indexed fields (usually less than a second with our current database). A variety of simple and complex search strategies may be used, and search results may be sorted, displayed, and printed in a wide variety of formats defined by the user as desired. See INMAGIC manual for details of strategies, commands, and relationships for searching the database. Un-indexed fields may also be searched for any word, phrase, or number, but at a slower rate.

To search the database and select particular references, choose SELECT at the Main Menu. If not already identified, indicate the filename and path for the database records (for example, CETACEA1 or B:CETACEA1 as in section on Start INMAGIC, page 6) and identify a temporary work file. Help information about search commands and relationships are available by pressing the Return [Ret] key (see below), providing rapid reminders of such commands as GET and DISPLAY. Search commands may be combined with search relations such as STARTS-WITH (ST), CONTAINS-WORD (CW), and CONTAINS-STEM (CS). Phrases are enclosed in quotation marks.

The LIST command lists contents of searchable (indexed) fields in the database, for example, of authors (L AU), editors (L ED), subjects (L SJ), or geographic location (L GA) to provide an alphabetical list of all entries in these fields of the reference database. Such a list may be limited by combining with alphanumeric search relations such as STARTS WITH (ST) or FROM...TO. See INMAGIC manual for other search relations.

SELECT COMMAND CHOICES FOR SEARCHING

| | | | |
|--------------------|--|------------------|-----------------------|
| <u>GET</u> | -start a new search | <u>NEW</u> | -describe new search |
| <u>AND</u> | -narrow search (inclusion) | <u>OLD</u> | -re-enter old search |
| <u>NOT</u> | -narrow search (exclusion) | <u>REPEAT</u> | -re-execute search |
| <u>OR</u> | -broaden the search | <u>STORE</u> | -save search results |
| | | <u>UNSTORE</u> | -erase stored search |
| <u>DISPLAY</u> | -show results on screen | <u>QUERY</u> | -show stored searches |
| <u>PRINT</u> | -print results in report | | |
| <u>WRITE</u> | -results into outside file | <u>STRUCTURE</u> | -show data structure |
| | | <u>LIST</u> | -show keys in index |
| <u>TEACH</u> | -display tutorial | <u>FILES</u> | -show disk directory |
| <u>EXIT</u> | -return to main menu | | |
| <u>?</u> (command) | -provides help for command named (or topics below) | | |
| <u>BOOLEAN</u> | (searches with complex command sequences) | | |
| <u>WORDS</u> | (searches with CW and CS relations) | | |
| <u>COMPARING</u> | (searches with EQ, ST, GE, LT, LE, FROM...TO) | | |

CETACEA Reference Database

More than 300 subjects are indexed in the database (see SUBJECT HEADING List). Each subject is tied directly to species by a code for each subject and each species, so that a LIST of the SUBJECT field ("L SJ") of a portion of the database might produce the following result:

```
3 FEEDING 404AB1A
2 FEEDING 404AB1A 404AC2A
1 INTELLIGENCE 545AB1A
```

This list indicates three records were found on feeding (code 404) by Eschrichtius robustus (code AB1A), two records on feeding in both E. robustus and Megaptera novaeangliae (AC2A), and one record on intelligence (code 545) in E. robustus.

A search statement using the GET command may be used to locate particular records. For example, for records discussing cetacean pigmentation, the search statement could be as follows: G SJ CW PIGMENTATION (GET SUBJECT CONTAINS-WORD PIGMENTATION). The result of this search might be this:

```
FOUND 6 PIGMENTATION IN SUBJECT
[Search] #1 NUMBER OF RECORDS :6
```

The result of this search #1 can then be viewed by using the DISPLAY command at the ready prompt (*): D #1 (DISPLAY search #1). Each of these complete references (records) with all species and subject headings will then be displayed, sequentially, either as complete record entries, or in any selected format with the information re-arranged. The original information used for the search statement will be highlighted.

If a paper by Schevill on pigmentation (code 233) in E. robustus (code AB1A) were desired, that record could be selected by including the AUTHOR field in the search: G AU CW SCHEVILL A SJ CW 233AB1A (GET AUTHOR CONTAINS-WORD SCHEVILL AND SUBJECT CONTAINS-WORD 233AB1A). If the year of publication were known to be 1980, then the search could be narrowed further by adding the YEAR field to the search: G AU CW SCHEVILL A YR CW 1980 A SJ CW 233AB1A (GET AUTHOR CONTAINS-WORD SCHEVILL AND YEAR CONTAINS-WORD 1980 AND SUBJECT CONTAINS-WORD 233AB1A).

The design of the database takes advantage of INMAGIC's right hand truncation. For example, to find records specifically on feeding in Balaenoptera edeni, the search statement could use the codes for feeding and B. edeni, like this: G SJ CW 404AC1C (GET SUBJECT CONTAINS-WORD 404AC1C). A less specific search for feeding in rorquals generally could leave off the last two characters of the species code and use the search relation CS (CONTAINS STEM): G SJ CS 404AC (GET SUBJECT CONTAINS-STEM 404AC) -- 404 is the code for feeding and AC the code for Balaenopteridae.

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ORGANIZATION OF DATABASE RECORDS --

Each record in the database is organized for convenience in making the entries, in searching of the indexed fields, and in reorganization of the references for display or printing:

Each record is given a unique number (RECNO).

The complete citation is entered in a standard bibliographic format.

Separate fields also are used for entering author, year, title, source, publisher, etc. to allow reordering of the citation for printing and for separate indexing of fields for rapid searches.

Codes for journal, type of publication, and language are indicated.

Genus/species names and alphanumeric codes are entered for all species in the reference -- order/suborder, family, genus, and species are indicated by each code.

Major subject (separate field), and any number of additional subjects (another field with unlimited subfields) are entered and directly related to species by subject and species codes.

Pictures that are important in the document are noted and related to subject and species by the codes.

Date of observations are associated with species by codes.

Geographic locations are indicated by area code, geographic name, and latitude/longitude when appropriate. These are all related to species by the codes.

Notes, and annotations may be included, and are related to species.

Location of the specific document (reprint, book, journal, etc.) and call numbers for particular collections or libraries are indicated.

Most fields in the records are indexed and may be searched separately to provide very rapid selection of these records. Fields such as citation (CITA) and notes (NOTES) are not indexed, but these too may be searched for any words, phrases, or alphanumeric notation. Searches of non-indexed entries are slower.

Lists of "Subject Headings" and "Species" with their codes are provided below to assist in searches of the database.

CETACEA Reference Database

DATA STRUCTURE FOR DATABASE --

| Field LABEL | Field NAME | INDEX | SORT | EMPHASIS |
|-------------|------------|-------|------|----------|
| RN | RECNO | T | 2 | 1 |
| CI | CITA | N | | |
| AU | AUTHOR | Y | 5 | 1 |
| YR | YEAR | Y | 5 | 1 |
| DA | DATE | Y | 4 | 1 |
| TI | TITLE | N | | |
| SO | SOURCE | N | | |
| VO | VOLUME | N | | |
| IS | ISSUE | N | | |
| PP | PAGES | N | | |
| ED | EDITOR | Y | 5 | 1 |
| ET | EDITON | N | | |
| PC | PUBCO | N | | |
| PL | PUBLOC | N | | |
| CO | CODEN | T | 5 | 1 |
| TY | TYPE | T | 5 | 1 |
| LG | LANGU | T | 5 | 1 |
| GS | GENSP | Y | 5 | 1 |
| TX | TAXO | Y | 5 | 1 |
| SM | SUBJMJ | Y | 5 | 1 |
| SJ | SUBJ | Y | 5 | 1 |
| PI | PICTU | Y | 5 | 1 |
| OD | OBSDATE | Y | 4 | 1 |
| GA | GEOA | Y | 5 | 1 |
| GB | GEOB | Y | 5 | 1 |
| GC | GEOC | Y | 7 | 1 |
| NT | NOTES | N | | |
| LO | LOCATE | T | 5 | 1 |
| QU | QUEST | Y | 5 | 1 |
| DF | DEFINE | N | | |

The field order within the database structure is pre-defined and assigned appropriate index, sort, and emphasis codes (see INMAGIC manual). A brief description is given below for the way data is entered into each field in the record structure for the database.

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DATABASE FIELDS (Label and Field name -- description)

- RN RECNO -- Record number is a unique number given to each record in the database. This number serves as a retrieval key for that particular record. Record numbers are not related to any aspect of the reference, except for the collection of older literature by W. E. Schevill in which his document numbers have been retained (1 to approximately 3200). Record numbers are noted on the documents in local libraries. This field is indexed.
- CI CITA -- Full reference citation is given in a standard format. Authors' last names are given first and capitalized.
- AU AUTHOR -- Each author (last name first, capitalized) is listed in a separate subfield in the order that they appear on the document. This field is indexed.
- YR YEAR -- Year of publication. This field is indexed.
- DA DATE -- Date of last modification or entry of the record (F6 Key).
- TI TITLE -- Title of the document.
- SO SOURCE -- Journal name or title of edited volume containing the document.
- VO VOLUME -- Volume, journal series, or report number.
- IS ISSUE -- Issue and "part" number of journal containing the document.
- PP PAGES -- Pagination of the document. In documents which contain intervening, unrelated pages, only the pages of the document are entered.
- ED EDITOR -- Each editor is listed (last name first) in separate subfields in the order that they appear on the document. This field is indexed.
- ET EDITON -- Edition of publication is noted if 2nd or later.
- PC PUBCO -- Publishing company name includes the full name (for example, University of California Press). Not applicable to serials.
- PL PULO -- Publisher's location includes city, state or country, with two-letter abbreviations for the States of the U.S. Not applicable to serials.

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- CO CODEN -- Coden is a standardized code for scientific journals assigned by the International CODEN Service (Chemical Abstracts Service, P.O. Box 3012, Columbus, OH 43210). A list of CODEN's is given in "Serial Sources for the BIOSIS Data Base" published by BioSciences Information Service, Philadelphia, PA 19103. This field is indexed.
- TY TYPE -- Type of record is indicated by letter code (journal, book, report, -- see list of types on page 14). This field is indexed.
- LG LANGU -- Language of the document (see language code list page 15). No entry for English. This field is indexed.
- GS GENSP -- Genus/Species include the scientific names of genera and species, with alphanumeric codes which include Order/suborder and Family. See Organization of the Species List p. 25. This field is indexed. Listed alphabetically.
- TX TAXO -- Taxonomy includes genus/species names used by the author which are synonyms of current names.
- SM SUBMJ -- Major subject of the document. See List of Subject Headings. Species are never subjects, but are tied to subjects by code. This field is indexed.
- SJ SUBJ -- Subjects of the document are listed alphabetically in separate subfields. The major subject (above) is repeated here to provide a complete list of Subject Headings. Species are never subjects, but are tied to subjects by code. This field is indexed.
- PI PICTU -- Pictures of note are indicated, including good drawings and photographs of activities by different species (related to subjects and species by codes). For example, a photograph of a feeding humpback whale would be entered in the Picture field (PICTU) with both the subject and species codes, 404 (feeding) and AC2A (Megaptera novaeangliae). This field is indexed.
- OD OBSDATE -- Observation date is entered (day-month-year, with hyphens) and related to species by code. Month and year are repeated in a subfield with species codes directly associated -- to allow searches of month and year separately. This field is indexed. For example, an entry for a gray whale sighting on 10 Oct 1910:
OBSDATE/1 10-Oct-1910 AB1A
OBSDATE/2 OctAB1A 1910AB1A

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- GA GEOA -- Geographic location A uses the sea area code from Aquatic Sciences and Fisheries Information System's Geographic Authority List. Species code is appended to the location code. This field is indexed. See map and Geographic Location Code list on pages 16 and 17.
- GB GEOB -- Geographic location B is the name of the area or body of water, may be associated with land. This field is indexed.
- GC GEOC -- Geographic location C is the latitude and longitude given in degrees, "N" or "S" for latitude (two digits), and "E" or "W" for longitude (three digits). Species codes are appended, for example: N70AA3A E020AA3A. Latitude and longitude coordinates provide a means of searching for specific locations or for larger areas by using a range of latitudes or longitudes, separately (search relation FROM ... TO). This field is indexed.
- NT NOTES -- Notes on the content of the document appear in this field, usually prefaced by species code.
- LO LOCATE -- Location of a copy of the document is noted if appropriate. Filing numbers and subjects of the documents in various collections are indicated along with call numbers. Library of Congress numbers may also be given. This field is indexed.
- QU QUEST -- Question includes lists of subject headings and and subject synonyms, as well as scientific names of species. This field is indexed.
- DF DEFINE -- Define includes definitions of subjects, helps, and sample search strategies.

The last two fields are special uses of the database for on-line help.

Most records of the CETACEA database will not have entries in all fields, and only those fields with information will be displayed in SELECT. However, the entire data structure is available in MAINTAIN for editing or entering new information.

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DOCUMENT TYPE --

TYPE -- Document type (label TY) uses a code based on the Aquatic Sciences and Fisheries Information System (ASFIS). These indicate Document Type, Bibliographic Level, and Literary Style. More than one code may be used for this TYPE field:

- B Monographs, non-serial documents, complete when issued.
- H Sound recordings (phonograph records, audio cassettes and tapes, etc.).
- J Journal (serial) publication, refereed scientific journals.
- K Conference proceedings or meeting reports. Also includes abstracts of papers presented at or submitted to conferences or meetings. (eg. individual abstracts from the biennial conferences on the biology of marine mammals) (excludes IWC documents). Mostly not published.
- L Papers from edited, published scientific volumes (such as from Winn & Olla, 1972. Behavior of Marine Animals, Current Perspectives in Research).
- M Unpublished papers, such as typescripts of papers submitted for publication, student reports, etc.
- I IWC documents. Includes all IWC documents, whether published in IWC volumes (special issues, annual reports, etc.) or submitted to the scientific committee and never published.
- P Popular publications (articles or books).
- Q Training manuals and other documents written primarily for training programs, such as P. M. Payne's marine mammal and seabird observer training manual for NMFS.
- R Scientific and technical reports (NTIS, MMS, NOSC, OCSEAP, AEWG, NMFS, WHOI, ETC. -- the so-called "GRAY" literature).
- U Dissertations, theses, or other treatises written to qualify for a university or other type of degree (p. 19, ASFIS).
- W Laws, statutes, regulatory reports, including Marine Mammal Commission annual reports.
- Z Bibliographies, or documents primarily for literature citations, used only to indicate bibliography as an important part of the text (p. 19, ASFIS).

CETACEA Reference Database

LANGUAGE CODES --

The language of the literature referenced in the database is identified by codes adapted from those used by the Aquatic Sciences and Fisheries Information System (ASFIS) with the following exceptions:

- (1) No code is used for documents in English.
- (2) "X" is prefixed to the two-letter language codes for non-English languages. For example, the code for a Russian paper is XRU.
- (3) "Y" is added to the two-letter language code to indicate an abstract or summary in another language (YEN would be used for an English language abstract). For example, a Russian language document with an English abstract has the following code: XRU YEN.

Thus, no entry is needed for the majority of references which are in English, but the database can be searched for English language papers by using the negative search relation -- GET LANGUAGE NOT CONTAINS-STEM X (G LG NO CS X).

Language codes refer only to the document at hand. English translation of papers published in other languages have the blank (English) code, but the CITATION (CITA) field will indicate the original language of the paper and its original publication.

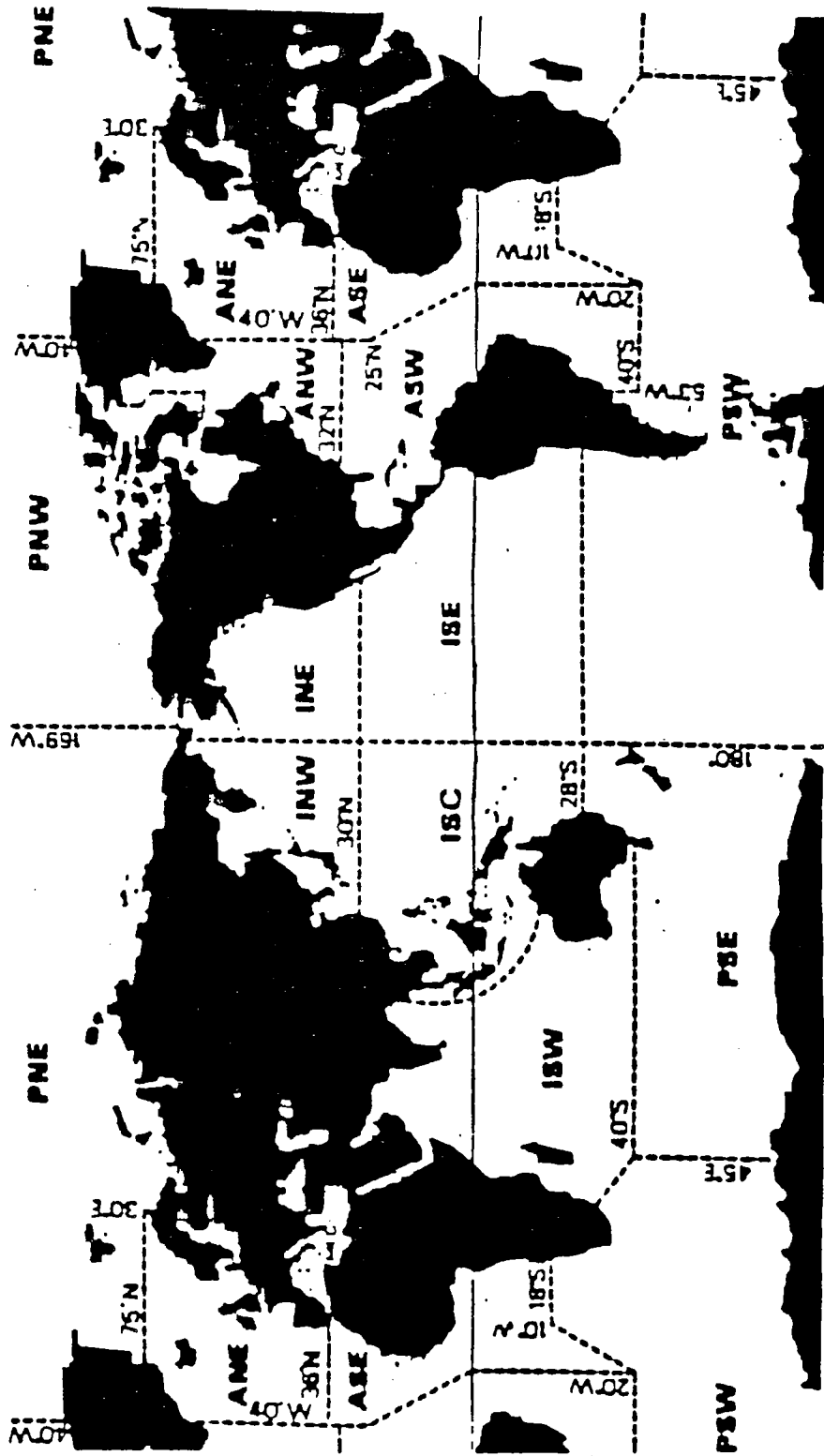
Some language codes used in the Database are as follows:

| | |
|-----------------|----------------------|
| XAF Afrikaans | XJA Japanese |
| XAR Arabic | XKO Korean |
| XCH Chinese | XLA Latin * |
| XCS Czech | XNL Dutch |
| XDA Danish | XNO Norwegian |
| XDE German | XPL Polish |
| XEE Estonian | XPT Portuguese |
| XES Spanish | XRU Russian |
| XFI Finnish | XSV Swedish |
| XFR French | XTR Turkish |
| XIC Icelandic * | YEN English abstract |
| XIT Italian | |

* not ASFIS codes

CETACEA Reference Database

ASFIS Map of Geographic Areas



CETACEA Reference Database

GEOGRAPHIC LOCATION CODES --

GEOA field -- The location of the work described in the reference is indexed by geographic codes generally following those of the Aquatic Sciences and Fisheries Information System (ASFIS):

| | |
|-------|-----------------------------|
| ANE | Northeast Atlantic |
| ANW | Northwest Atlantic |
| ASE | Southeast Atlantic |
| ASW | Southwest Atlantic |
| INE | Northeast Pacific |
| INW | Northwest Pacific |
| ISE | Southeast Pacific |
| ISC * | Southwest (central) Pacific |
| ISW | Indian Ocean |
| MED | Mediterranean |
| PNE | Eastern Arctic Ocean |
| PNW | Western Arctic Ocean |
| PSE | Eastern Antarctic Ocean |
| PSW | Western Antarctic Ocean |
| CSL * | Coastal Waters |
| FSR * | Freshwater |
| COS * | Cosmopolitan |

* not ASFIS codes

The species codes are combined with the ocean area codes. For example, a paper on Megaptera novaeangliae in the Indian Ocean is indexed with the codes ISWAC2A (ISW for the Indian Ocean and AC2A for Megaptera novaeangliae).

CETACEA Reference Database

ORGANIZATION OF SPECIES LIST --

The list of species for the Reference Database is arranged alphabetically within families. Alphanumeric codes have been assigned to each species by (1) order/suborder, (2) family, (3) genus, and (4) species. These were assigned initially in ascending (alphanumeric) order, with spaces for taxonomic revision when needed.

The first place of the species code is a letter representing the order or suborder. The letter "A" denotes the suborder Mysticeti and includes 11 species. The letter "B" denotes the suborder Odontoceti and includes 68 species. The letter "C" denotes the order Carnivora, including 37 species of pinnipeds, sea otters, and polar bear. The letter "D" denotes Sirenia and includes 5 species. Other orders and suborders are included in general categories and are coded by letter (E-Z).

The second place of the marine mammal species code is a letter representing the family. For example, the Species List indicates the Balaenopteridae as code "AC" -- or suborder Mysticeti "A" and family Balaenopteridae "C". The code for Ziphiidae is "BC" -- or suborder Odontoceti "B", family Ziphiidae "C".

The third place of the species code is a number of one or two digits representing the genus. For example, the code for Mesoplodon is "BC2" -- or suborder Odontoceti "B", family Ziphiidae "C", genus Mesoplodon "3". The code for Kogia is "BA1" -- or suborder Odontoceti "B", family Physeteridae "A", genus Kogia "1". The code for the genus Stenella is "BD15" (suborder Odontoceti "B", family Delphinidae "D", and genus Stenella "15").

The last place of the species code is a letter representing species. For example, the code for Kogia breviceps is "BA1A" (suborder Odontoceti "B", family Physeteridae "A", genus Kogia "1", species breviceps "A"). The code for Kogia simus is "BA1B". The code for Cephalorhynchus hectori is "BD1D" (suborder Odontoceti "B", family Delphinidae "D", genus Cephalorhynchus "1", species hectori "D"). A reference about finback whales will have "Balaenoptera physalus AC1F" in the genus/species field.

List of Species and Their Codes

SPECIES LIST

CETACEA DATABASE

MARINE MAMMAL LITERATURE REFERENCES

April 1990

CETACEA Database SPECIES LIST

Mysticeti ----- A

Balaenidae ----- AA

| | |
|--|------|
| <u>Balaena mysticetus</u> Linnaeus 1758 | AA1A |
| <u>Caperea marginata</u> (Gray) 1846 | AA2A |
| <u>Eubalaena glacialis</u> (Borowski) 1781 | AA3A |
| <u>Eubalaena australis</u> (Desmoulins) 1822 | AA3B |

Eschrichtiidae ---- AB

| | |
|--|------|
| <u>Eschrichtius robustus</u> (Lilljeborg) 1861 | AB1A |
|--|------|

Balaenopteridae --- AC

| | |
|---|------|
| <u>Balaenoptera acutorostrata</u> Lacépède 1804 | AC1A |
| <u>Balaenoptera bonaerensis</u> Burmeister 1867 | AC1D |
| <u>Balaenoptera borealis</u> Lesson 1828 | AC1B |
| <u>Balaenoptera edeni</u> Anderson 1878 | AC1C |
| <u>Balaenoptera musculus</u> (Linnaeus) 1758 | AC1E |
| <u>Balaenoptera physalus</u> (Linnaeus) 1758 | AC1F |
| <u>Megaptera novaeangliae</u> (Borowski) 1781 | AC2A |

Odontoceti ----- B

Physeteridae ----- BA

| | |
|--|------|
| <u>Kogia breviceps</u> (Blainville) 1838 | BA1A |
| <u>Kogia simus</u> (Owen) 1866 | BA1B |
| <u>Physeter catodon</u> Linnaeus 1758 | BA2A |

Monodontidae ----- BB

| | |
|--|------|
| <u>Delphinapterus leucas</u> (Pallas) 1776 | BB1A |
| <u>Monodon monoceros</u> Linnaeus 1758 | BB2A |

Ziphiidae ----- BC

| | |
|--|------|
| <u>Berardius arnuxii</u> Duvernoy 1851 | BC1A |
| <u>Berardius bairdii</u> (Stejneger) 1883 | BC1B |
| <u>Hyperoodon ampullatus</u> (Forster) 1770 | BC2A |
| <u>Hyperoodon planifrons</u> Flower 1882 | BC2B |
| <u>Indopacetus pacificus</u> (Longman) 1926 | BC3D |
| <u>Mesoplodon bidens</u> (Sowerby) 1804 | BC5A |
| <u>Mesoplodon bowdoini</u> Andrews 1908 | BC5B |
| <u>Mesoplodon carlhubbsi</u> Moore 1963 | BC5C |
| <u>Mesoplodon densirostris</u> (Blainville) 1817 | BC5D |
| <u>Mesoplodon europaeus</u> Gervais 1855 | BC5E |
| <u>Mesoplodon ginkgodens</u> Nishiwaki and Kamiya 1958 | BC5H |
| <u>Mesoplodon grayi</u> von Haast 1876 | BC5J |
| <u>Mesoplodon hectori</u> (Gray) 1871 | BC5K |
| <u>Mesoplodon layardii</u> (Gray) 1865 | BC5L |
| <u>Mesoplodon mirus</u> True 1913 | BC5M |
| <u>Mesoplodon stejnegeri</u> True 1885 | BC5S |
| <u>Tasmacetus shepherdii</u> Oliver 1937 | BC7A |
| <u>Ziphius cavirostris</u> G. Cuvier 1823 | BC9A |

CETACEA Database SPECIES LIST

Delphinidae ----- BD

| | |
|--|-------|
| <u>Cephalorhynchus commersonii</u> Lacépède 1804 | BD1A |
| <u>Cephalorhynchus eutropia</u> (Gray) 1846(?) | BD1B |
| <u>Cephalorhynchus heavisidii</u> (Gray) 1828 | BD1C |
| <u>Cephalorhynchus hectori</u> van Beneden 1881 | BD1D |
| <u>Delphinus bairdii</u> Dall 1873 | BD3A |
| <u>Delphinus delphis</u> Linnaeus 1758 | BD3B |
| <u>Delphinus tropicalis</u> van Bree 1971 | BD3C |
| <u>Grampus griseus</u> (Cuvier) 1812 | BD4A |
| <u>Lagenodelphis hosei</u> Fraser 1957 | BD5A |
| <u>Lagenorhynchus acutus</u> (Gray) 1828 | BD6A |
| <u>Lagenorhynchus albirostris</u> Gray 1846 | BD6B |
| <u>Lagenorhynchus australis</u> (Peale) 1848 | BD6C |
| <u>Lagenorhynchus cruciger</u> (Quoy and Gaimard) 1824 | BD6E |
| <u>Lagenorhynchus obliquidens</u> Gill 1865 | BD6G |
| <u>Lagenorhynchus obscurus</u> (Gray) 1828 | BD6H |
| <u>Lissodelphis borealis</u> (Peale) 1848 | BD8A |
| <u>Lissodelphis peronii</u> (Lacépède) 1804 | BD8B |
| <u>Peponocephala electra</u> (Gray) 1846 | BD10A |
| <u>Sotalia borneensis</u> Lydekker 1901 | BD12A |
| <u>Sotalia brasiliensis</u> Van Beneden 1875 | BD12C |
| <u>Sotalia fluviatilis</u> (Gervais) 1855 | BD12B |
| <u>Sotalia guianensis</u> Van Beneden 1864 | BD12D |
| <u>Sousa chinensis</u> (Osbeck) 1765 | BD13A |
| <u>Sousa plumbea</u> (Cuvier) 1829 | BD13B |
| <u>Sousa teuszii</u> (Kükenthal) 1892 | BD13C |
| <u>Stenella attenuata</u> (Gray) 1846 | BD15A |
| <u>Stenella clymene</u> Gray 1850 | BD15B |
| <u>Stenella coeruleoalba</u> (Meyen) 1833 | BD15C |
| <u>Stenella frontalis</u> (G. Cuvier) 1829 | BD15F |
| <u>Stenella longirostris</u> (Gray) 1828 | BD15L |
| <u>Steno bredanensis</u> (Cuvier) 1828 | BD17A |
| <u>Tursiops aduncus</u> (Ehrenberg) 1832 | BD19A |
| <u>Tursiops catalania</u> (Gray) 1868 | BD19B |
| <u>Tursiops gillii</u> Dall 1873 | BD19C |
| <u>Tursiops truncatus</u> (Montagu) 1821 | BD19D |

Globicephalidae - BE

| | |
|---|------|
| <u>Feresa attenuata</u> Gray 1874 | BE1A |
| <u>Globicephala edwardii</u> Smith 1934 | BE3A |
| <u>Globicephala macrorhynchus</u> (Gray) 1846 | BE3B |
| <u>Globicephala melaena</u> (Traill) 1809 | BE3C |
| <u>Globicephala scammoni</u> Cope 1869 | BE3D |
| <u>Orcaella brevirostris</u> (Owen 1866) | BE5A |
| <u>Orcaella fluminalis</u> Anderson 1871 | BE5B |
| <u>Orcinus orca</u> (Linnaeus) 1758 | BE7A |
| <u>Pseudorca crassidens</u> (Owen) 1846 | BE9A |

Phocoenidae ---- BF

| | |
|---|------|
| <u>Australophocaena dioptrica</u> Lahille 1912 | BF1A |
| <u>Phocoena phocoena</u> (Linnaeus) 1758 | BF2A |
| <u>Phocoena spinipinnis</u> Burmeister 1865 | BF2B |
| <u>Phocoena sinus</u> Norris and McFarland 1958 | BF2C |
| <u>Phocoenoides dalli</u> (True) 1885 | BF4A |
| <u>Neophocaena phocaenoides</u> (G.Cuvier) 1829 | BF6A |

CETACEA Database SPECIES LIST

Susuidae ----- BG

| | |
|--|------|
| <u>Susu gangetica</u> Lebeck 1801 | BG1A |
| <u>Susu indii</u> Blyth 1859 | BG1B |
| <u>Inia geoffrensis</u> Blainville 1817 | BG2A |
| <u>Lipotes vexillifer</u> Miller 1918 | BG3A |
| <u>Pontoporia blainvillei</u> (Gervais) 1844 | BG4A |

Carnivora ----- C

Otariidae ----- CA

| | |
|---|------|
| <u>Arctocephalus australis</u> (Zimmerman) 1783 | CA1A |
| <u>Arctocephalus forsteri</u> Lesson 1828 | CA1F |
| <u>Arctocephalus galapagoensis</u> Heller 1904 | CA1G |
| <u>Arctocephalus gazella</u> Peters 1875 | CA1H |
| <u>Arctocephalus philippii</u> Peters 1866 | CA1P |
| <u>Arctocephalus pusillus</u> (Schreber) 1776 | CA1R |
| <u>Arctocephalus townsendi</u> Merriam 1897 | CA1T |
| <u>Arctocephalus tropicalis</u> (Gray) 1872 | CA1W |
| <u>Callorhinus ursinus</u> (Linnaeus) 1758 | CA2A |
| <u>Eumetopias jubatus</u> (Schreber) 1776 | CA3B |
| <u>Neophoca cinerea</u> (Peron) 1816 | CA4A |
| <u>Otaria flavescens</u> (Shaw) 1800 | CA6A |
| <u>Phocarctos hookeri</u> (Gray) 1844 | CA8A |
| <u>Zalophus californianus</u> (Lesson) 1828 | CA9A |

Odobenidae ----- CB

| | |
|--|------|
| <u>Odobenus rosmarus</u> (Linnaeus) 1758 | CB1A |
|--|------|

Phocidae ----- CC

| | |
|---|-------|
| <u>Cystophora cristata</u> (Erxleben) 1777 | CC1A |
| <u>Erigonathus barbatus</u> (Erxleben) 1777 | CC2A |
| <u>Halichoerus grypus</u> (Fabricius) 1791 | CC3A |
| <u>Hydrurga leptonyx</u> (Blainville) 1820 | CC4A |
| <u>Leptonychotes weddelli</u> (Lesson) 1826 | CC5A |
| <u>Lobodon carcinophagus</u> (Hombron & Jacquinot) 1842 | CC6A |
| <u>Monachus monachus</u> (Hermann) 1779 | CC8A |
| <u>Monachus schauinslandi</u> Matschie 1905 | CC8B |
| <u>Monachus tropicalis</u> Gray 1850 | CC8C |
| <u>Mirounga angustirostris</u> Gill 1866 | CC10A |
| <u>Mirounga leonina</u> (Linnaeus) 1758 | CC10B |
| <u>Phoca caspica</u> Gmelin 1788 | CC12C |
| <u>Phoca fasciata</u> Zimmermann 1783 | CC12F |
| <u>Phoca groenlandica</u> Erxleben 1777 | CC12G |
| <u>Phoca hispida</u> Schreber 1775 | CC12H |
| <u>Phoca largha</u> Pallas 1811 | CC12L |
| <u>Phoca sibirica</u> Gmelin 1788 | CC12S |
| <u>Phoca vitulina</u> Linnaeus 1758 | CC12V |
| <u>Ommatophoca rossii</u> Gray 1844 | CC14A |

Mustelidae ----- CD

| | |
|---------------------------------------|---------|
| <u>Enhydra lutris</u> (Linnaeus) 1758 | CD1A |
| <u>Lutra felina</u> Molina 1782 | C D 2 B |

CETACEA Database SPECIES LIST

| | | |
|---|----|------|
| Ursidae ----- | CE | |
| <u>Ursus maritimus</u> Phipps 1774 | | CE1A |
| Sirenia ----- | D | |
| Dugongidae ----- | DA | |
| <u>Dugong dugon</u> Muller 1776 | | DA1A |
| <u>Hydrodamalis gigas</u> Zimmermann 1780 | | DA2B |
| Trichechidae ----- | DB | |
| <u>Trichechus inunguis</u> (Natterer) 1883 | | DB1A |
| <u>Trichechus manatus</u> Linnaeus 1758 | | DB1B |
| <u>Trichechus senegalensis</u> Link 1795 | | DB1C |
| <u>Trichechus koellikeri</u> (Kukenthal) 1897 | | DB1D |
| OTHER MAMMALS | | |
| Primates ----- | E | |
| Chiroptera ----- | F | |
| Ungulates, <u>sensu lato</u> ----- | G | |
| Other mammals ----- | H | |
| VERTEBRATES | | |
| Aves ----- | I | |
| Reptilia ----- | J | |
| Amphibia ----- | K | |
| Fish, <u>sensu lato</u> ----- | L | |
| Other vertebrates ----- | S | |
| INVERTEBRATES | | |
| Molluscs | | |
| Cephalopoda ----- | M | |
| Other molluscs ----- | N | |
| Arthropods | | |
| Crustacea ----- | O | |
| Insecta ----- | P | |
| Other arthropods ----- | Q | |
| Other invertebrates ----- | R | |
| FOSSILS ----- | T | |
| GENERAL | | |
| Uncertain (sea serpents and other indetereminate animals) ---- | U | |
| General pinniped ----- | V | |
| General cetacean ----- | W | |
| General mammal ----- | Y | |
| Animals in general ----- | Z | |

Subject Headings and Their Codes

SUBJECT HEADINGS

CETACEA Database

MARINE MAMMAL LITERATURE REFERENCES

April 1990

CETACEA Database SUBJECT HEADINGS

Marine Mammal Literature Reference Database

Woods Hole Oceanographic Institution

BT = Broad Term, NT = Narrow Term, RT = Related Term
(Non-underlined subjects for reference only)

Abundance

- Geographic distribution 455
- Group size 715
- Mortality 657
- Population models 785
- Population trends 528
- Recruitment 449
- Seasonal occurrence 897
- Stock assessment 725
- Stock management 955
- Acoustic analysis techniques 400
 - RT Acoustic location 170
 - Sound spectra 303
- Acoustic census 500
 - attempts to count animals by listening for them.
 - BT Census techniques 205
 - RT Acoustic location 170
 - Seasonal occurrence 897
 - Stock assessment 725
- Acoustic communication 900
 - NT Coda 225
 - Dialect 289
 - Distress call 309
 - Signature signal 953
 - Song 965
 - BT Call 174
 - Click 221
 - Phonation 761
 - Whistle 395
 - RT Hearing 487
 - Hydrodynamic sound 507
 - Sound production 997
- Acoustic lens 130
 - RT Sound directionality 985
 - Sound production 997
 - Sound propagation 444
- Acoustic location 170
 - location by listening, as by hydrophone array.
 - RT Acoustic analysis techniques 400
 - Hydrophone 509
 - Orientation 709
 - Sound directionality 985

CETACEA Database SUBJECT HEADINGS

Adaptation
Behavioral ecology 139
Evolution 384
Habitat preference 575
Learning 582
Paleontology 733
Social learning 589
Vocal learning 548
Aerial behavior 250
 -- behaviors visible out of water.
 NT Breaching 177
 Flippers 419
 Fluking 424
 RT Flippers 419
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 Aerial observation
 Census techniques 205
 Cetacean general 171
 Geographic distribution 455
 Habitat preference 575
 Noise aircraft 650
 Photographic techniques 765
Age and growth 314
 NT Growth rate 465
 RT Dimensions 305
 Juvenile 557
 Lifespan 584
 Neonate 315
 Otoliths (fish) 721
 Sexual dimorphism 933
 Sexual maturity 989
 Weaning 742
Age estimation baleen 370
 BT Baleen 129
Age estimation bone 390
 BT Osteology 717
Age estimation corpora lutea 410
 BT Reproductive system 849
Age estimation ear plug 450
 BT Ear 113
Age estimation tag returns 490
 BT Mark recapture 609
 Tagging 753
Age estimation teeth 530
 BT Teeth 755
 RT Growth rate 465
 Aggression
 Agonistic behavior 570
 Dominance hierarchy 333
 Fish marine mammal 941
 Predator defense 801
 Social behavior 957

CETACEA Database SUBJECT HEADINGS

Agonistic behavior 570
 RT Dominance hierarchy 333
 Predator defense 801
 Social behavior 957

Aircraft
 Census techniques 205
 Noise aircraft 650

Albinism 730
 RT Pigmentation 233

Allomaternal
 RT Care giving 201
 Parental 617

Allometry 750
 RT Brain 173
 Dimensions 305
 Photographic techniques 765

Altruism 770
 RT Care giving 201
 Parental 617

Ambergris 810
 RT Digestive system 301
 Excretion 389
 Squid as food 437

Ambient noise 850
 NT Noise aircraft 650
 Geologic noise 335
 Noise industrial 533
 Noise seismic exploration 909
 Noise ship 277
 Splashes 163
 RT Rain 821
 Weather 611

Amplifier 890
 -- discussion of amplifiers, not the mention of those used.
 RT Hydrophone 509
 Recording system 829

Anatomical subjects
 Allometry 750
 Anatomy (general) 325
 Baleen 129
 Baleen count 707
 Blowhole 157
 Dental formula 747
 Digestive system 301
 Ear 113
 Endocrine system 361
 Eye 880
 Fin (and dorsal carina) 337
 Flippers 419
 Flukes 421
 Genitalia 453
 Glands 775

CETACEA Database SUBJECT HEADINGS

Anatomical subjects (continued)

- Healing 485
- Heart 489
- Hormones 497
- Kidney 565
- Larynx 577
- Liver 772
- Lungs 317
- Meat 625
 - commercial consumption.
- Melon 629
- Mouth 660
 - includes tongue, rostral adaptations.
- Muscles 669
- Nervous system 681
- Nose 689
 - includes anatomy, nasal passages.
- Osteology 717
- Pathology 749
- Pelvis 319
- Pigmentation 233
- Reproductive system 849
 - includes ovaries, testes.
- Respiratory system 861
- Sexual dimorphism 933
- Skin 373
- Skull 257
- Tail 900
- Teeth 755
- Throat 249
- Tongue 727
- Vascular system 223
- Ventral grooves 673
- Vertebral formula 740
- Vestigial organs 210
- Viscera 215
- Anatomy (general) 325
 - see anatomical subjects.
 - see physiology, various subjects.
- Anecdote
 - Collector's troubles 397
 - Yarn 367
- Anesthesia 930
 - RT Pathology 749
- Apnea
 - Diving physiology 325
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CETACEA Database SUBJECT HEADINGS

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Acoustic analysis techniques 400
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Hydrophone 509
Orientation 709
Sound directionality 985
Sound propagation 444
Sound source level 555

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-- bilateral anatomical asymmetry.
 RT Blow 153
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Pigmentation 233
Osteology 717
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Agonistic behavior 570
Competition 235
Dominance heirarchy 333
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Altruism 770
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Neonate 315
Parental 617

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 RT Ear 113
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Hearing 487
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Auditory physiology 121
Critical bandwidth 261
Directional hearing 993
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CETACEA Database SUBJECT HEADINGS

Auditory physiology 121
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 Directional hearing 993
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 Hearing 487

Avoidance
 Agonistic behavior 570
 Behavior 312
 Noise aircraft 650
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 Noise ship 277
 Playback 781
 Predator defense 801

Baleen 129
 NT Age estimation baleen 370
 Baleen count 707
 RT Feeding 404
 Mouth 660
 Tongue 727

Baleen count 707
 RT Dental formula 747
 Phalangeal formula 543
 Taxonomy 287
 Vertebral formula 740

Ballistics
 Dolphin fishery 735
 Sealing 893
 Tagging 753
 Whaling 938
 Whaling techniques 432

Bandwidth
 Acoustic analysis techniques 400
 Amplifier 890
 Critical bandwidth 261
 Harmonic 473
 Hearing 487
 Hydrophone 509
 Masking 613
 Phonation 761
 Recording system 829
 Sound projector 805
 Sound spectra 303
 Telemetry 828

Barnacles 137
 BT Ectoparasite 349
 RT Endoparasite 365

Behavior 312
 NT Aerial behavior 250
 Agonistic behavior 570
 Care giving 201
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 Feeding 404

CETACEA Database SUBJECT HEADINGS

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 - Fish marine mammal 941
 - Grooming 461
 - Haul-out 481
 - Human marine mammal interaction 881
 - Juvenile 557
 - Mating 621
 - Mixed species 645
 - Object interaction 693
 - Neonate 315
 - Parental 617
 - Predator defense 801
 - Resting behavior 863
 - Schooling 889
 - Sexual behavior 929
 - Sleep 927
 - Social behavior 957
 - Social play 958
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 - behavioral adaptations to environment.
 - RT Geographic distribution 455
 - Habitat conservation 241
 - Habitat preference 575
 - Seasonal occurrence 897
 - Territoriality 700
- Benthos as food 423
 - BT Food 422
 - RT Feeding 404
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 - Squid as food 737
 - Scattering layer 885
 - Suction feeding 408
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 - in the "document TYPE" field, a separate code.
 - Literature references 590
 - papers containing noteworthy references.
 - Literature review 593
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 - Review 169
 - reviews of a publication.
- Biochemistry 141
 - RT Fats oils waxes 401
- Biography 757
 - RT Literature review 593
 - Review 169
- Bioluminescence 145
 - RT Benthos as food 423
 - Fish as food 425
 - Pigmentation 233
 - Scattering layer 885
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CETACEA Database SUBJECT HEADINGS

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 -- interactions between birds and marine mammals.
 BT Mixed species 645
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 Neonate 515
 Parental 617
 Recruitment 449
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 -- includes blood type.
 RT Body temperature 159
 Heart 489
 Thermoregulation 583
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Blow 153
 -- visibility, audibility, and physical characteristics.
 NT Underwater blow 817
 BT Respiratory system 861
 RT Blowhole 157
 Respiration rate 857

Blowhole 157
 BT Respiratory system 861
 RT Asymmetry 101
 Blow 153
 Respiration rate 857

Blubber 161
 RT Body temperature 159
 Fats oils waxes 401
 Skin 373
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CETACEA Database SUBJECT HEADINGS

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 Blubber 161
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 Locomotion 597
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 Brain 173
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 RT Allometry 750
 Cognition 229
 Intelligence 545
 Learning 582
 Memory 633
 Breaching 177
 BT Aerial behavior 250
 RT Speed 780
 Fluking 424
 Splashes 163
 Wave riding 160
 Bubble feeding 181
 -- bubbles observed during feeding.
 BT Feeding 404
 RT Fish as food 425
 Food 422
 Underwater blow 817

CETACEA Database SUBJECT HEADINGS

Calf

Age and growth 314
Birth 745
Care giving 201
Foetus 405
Growth rate 465
Juvenile 557
Lactation 569
Multiplets 661
Neonate 315
Parental 617
Sex ratio 921
Weaning 742

Call 174

NT Distress call 309
 BT Phonation 761
 RT Acoustic communication 900
Whistle 395

Callosities 165

RT Dermal hardening 285
Field marks 413
Individual identification 529
Pigmentation 233
Skin 373

Captive release 677

-- release or recovery of captives.
 RT Captivity 193
Capture techniques 197
Competition with fisheries 719
Human marine mammal interaction 881
Incidental catch 525

Captivity 193

RT Captive release 677
Capture techniques 197
Entrapment 371
Incidental catch 525
Medical care 831

Capture techniques 197

RT Captive release 677
Dolphin fishery 735
Sealing 893
Whaling 938

Care giving 201

RT Altruism 770
Birth 745
Juvenile 557
Mass stranding 275
Neonate 315
Parental 617
Stranding live 665

CETACEA Database SUBJECT HEADINGS

Catch statistics
Dolphin fishery 735
Incidental catch 525
Population trends 528
Whaling quotas 794
Whaling statistics 167

Cavitation
Hydrodynamic 505
Hydrodynamic sound 507
Noise ship 277

Census
Acoustic census 500
Census techniques 205
Geographic distribution 455
Population trends 528
Seasonal occurrence 897
Stock assessment 725

Census techniques 205
 NT Acoustic census 500
 RT Mark recapture 609
Tagging 753
Stock assessment 725

Cetacean general 171
 -- general information.
 RT Pinniped general 118

Chemical communication 209
 -- see communication.
 BT Chemoreception 213
Olfaction 705
Taste 469

Chemistry
Biochemistry 141
Blood 917
Chemical communication 209
Chemoreception 213
Contaminants 245

Chemoreception 213
 RT Chemical communication 209
Olfaction 705
Taste 469

Circulatory system
Blood 917
Heart 489
Thermoregulation 583
Vascular system 223

Click 221
 BT Phonation 761
 RT Acoustic analysis techniques 205
Acoustic communication 900
Echolocation 345
Phonation 761
Sound spectra 303

CETACEA Database SUBJECT HEADINGS

Cochlea
Auditory physiology 121
Ear 113
Hearing 487

Coda 225
 NT Click 221
 Signature signal 953
 BT Phonation 761
 RT Acoustic communication 900
 Individual identification 529

Cognition 229
 RT Brain 173
 Coda 225
 Intelligence 545
 Learning 582
 Imitation 517
 Memory 633
 Signature signal 953
 Social learning 956
 Training 915
 Vocal learning 548

Collector's troubles 397
 RT Museum collections 738
 Yarns 367

Color
Albinism 730
Callosities 165
Dermal hardening 285
Ectoparasite 349
Pigmentation 233
Skin 373

Communication
Acoustic communication 900
Call 174
Chemical communication 209
Click 221
Coda 225
Dialect 289
Distress call 309
Hearing 487
Hydrodynamic sound 507
In air vision 523
Phonation 761
Olfaction 705
Signature signal 953
Song 965
Sound production 997
Touch 800
Underwater vision 445
Visual communication 237
Whistle 395

CETACEA Database SUBJECT HEADINGS

Competition 235
 RT Competition with fisheries 719
 Dominance heirarchy 333
 Feeding 404
 Mating 621
 Reproduction 845
 Social behavior 957
 Territoriality 700
Competition with fisheries 719
 RT Capture techniques 197
 Entrapment 371
 Fish as food 425
 Human marine mammal interaction 881
 Incidental catch 525
 Conservation
 Behavioral ecology 139
 Geographic distribution 455
 Habitat conservation 241
 Habitat preference 575
 Home range 493
 Protectionism 815
 Stock assessment 725
Contaminants 245
 RT Masking 613
 Mortality 657
 Noise aircraft 650
 Noise industrial 533
 Noise seismic exploration 909
 Noise ship 277
 Petroleum effects 701
Cooperation 247
 NT Altruism 770
 Care giving 201
 Coordinated feeding 402
 BT Feeding 404
 Social behavior 957
Coordinated feeding 402
 BT Feeding 404
 RT Fish as food 425
 Food 422
 Lunge feeding 406
 Plankton as food 433
 Copulation
 Competition 235
 Genitalia 453
 Mating 621
 Reproduction 845
 Reproductive season 515
 Sexual behavior 929

CETACEA Database SUBJECT HEADINGS

Corpora lutea
Age estimation corpora lutea 410
Recruitment 449
Reproductive interval 189
Reproductive system 849

Count
Baleen count 707
Dental formula 747
Phalangeal formula 543
Vertebral formula 740

Cow Calf
Birth 745
Care giving 201
Neonate 315
Juvenile 557
Parental 617

Courtship
Competition 235
Dominance heirarchy 333
Mating 621
Reproduction 845
Reproductive interval 189
Reproductive season 515
Sexual behavior 929
Social behavior 957

Cranial osteology
Museum collections 738
Osteology 717
Paleontology 733
Skull 257

Critical bandwidth 261
 BT Masking 613
 RT Hearing 487
Sound spectra 303

Currents
Oceanographic features 697
Tides 238
Water temperature 539

Cyamids 269
 BT Callosities 165
Ectoparasite 349

Deep scattering layer
Bioluminescence 145
Fish as food 425
Plankton as food 433
Scattering layer 885
Sonar 961
Squid as food 437

Defecate
Excretion 389

CETACEA Database SUBJECT HEADINGS

Defensive behavior
 Agonistic behavior 570
 Predator defense 801
 Sexual behavior 929
 Social behavior 957
Dental formula 747
 RT Age estimation teeth 530
 Baleen count 707
 Phalangeal formula 543
 Vertebral formula 740
Dermal hardening 285
 RT Callosities 165
 Skin 373
 Dermis
 Blubber 161
 Dermal hardening 285
 Skin 373
Diagnosis taxonomic 935
 RT Scientific nomenclature 685
 Systematics 978
 Taxonomy 287
Dialect 289
 BT Acoustic communication 900
 Geographic distribution 455
 Phonation 761
Diel 293
 RT Photoperiod 273
 Diet
 Food 422
 Digestive system 301
 Feeding 404
 Stomach contents 486
Digestive system 301
 RT Ambergris 810
 Excretion 389
 Feeding 404
 Food 422
 Liver 772
 Stomach contents 486
Dimensions 305
 -- including length, girth, surface area.
 RT Allometry 750
 Field identification guide 409
 Photographic techniques 765
 Weight in air 418
 Weight in water 819
 Whaling statistics 167

CETACEA Database SUBJECT HEADINGS

- Directional hearing 993
 - BT Hearing 487
 - RT Acoustic location 170
 - Echolocation 345
 - Orientation 709
 - Sound directionality 985
 - Sound production 997
 - Sound propagation 444
- Directionality
 - Acoustic location 170
 - Directional hearing 993
 - Echolocation 345
 - Hydrophone 509
 - Orientation 709
 - Sound directionality 985
 - Sound production 997
 - Sound projector 805
 - Sound propagation 444
- Discrimination
 - Audiogram 109
 - Directional hearing 993
 - Echolocation 345
 - Hearing 487
 - Masking 613
 - Sound spectra 303
 - Sound directionality 985
 - see visual, various subjects.
- Disease
 - Endoparasite 365
 - Medical care 831
 - Pathology 749
- Distress call 309
 - BT Call 174
 - Phonation 761
 - RT Acoustic communication 900
 - Agonistic behavior 570
 - Predator defense 801
- Distribution
 - Geographic distribution 455
 - Habitat preference 575
 - Home range 493
 - Seasonal occurrence 897
- Disturbance
 - Agonistic behavior 570
 - Contaminants 245
 - Habitat conservation 241
 - Military effects 763
 - Noise aircraft 650
 - Noise industrial 533
 - Noise seismic exploration 909
 - Noise ship 277
 - Protectionism 815
 - Ship injury 535

CETACEA Database SUBJECT HEADINGS

Diurnal behavior
Diel 293
Photoperiod 273
Dive depth 281
 BT Diving 321
 RT Diving physiology 325
 Dive duration
Dive depth 281
Diving 321
Diving physiology 325
Metabolism 637
Respiration rate 857
Diving 321
 NT Dive depth 281
 RT Diving physiology 325
Fluking 424
Respiration rate 857
Diving physiology 325
 BT Diving 321
 RT Dive depth 281
Metabolism 637
Respiration rate 857
Dolphin fishery 735
 -- fishing for dolphins.
 RT Competition with fisheries 719
Human marine mammal interaction 881
Incidental catch 525
Sealing 893
Whaling 938
 Dolphin/porpoise
Scientific nomenclature 685
Taxonomy 287
Vernacular names 329
Dominance hierarchy 333
 RT Agonistic behavior 570
Social behavior 957
Social organization 959
Territoriality 700
 Dorsal fin
Fin 337
 -- includes dorsal carina.
Ear 113
 NT Age estimation ear plug 450
 RT Audiogram 109
Auditory physiology 121
Critical bandwidth 216
Fish hearing 415
Hearing 487
In air hearing 521
 Ear plug
Age estimation ear plug 450
Ear 113

CETACEA Database SUBJECT HEADINGS

Echiniid fish
 Ectoparasite 349
 Remora 837
 Echo sounding (by humans)
 Scattering layer 885
 Sonar 961
 Sound propagation 444
 Target strength 342
Echolocation 345
 -- by animals.
 BT Phonation 761
 Hearing 487
 RT Feeding 404
 Sonar 961
 -- by humans
 Sound directionality 985
 Sound production 997
 Swim bladder 888
 Target strength 342
 Ecology
 Behavioral ecology 139
 Contaminants 245
 Geographic distribution 455
 Habitat conservation 241
 Habitat preference 575
 Home range 493
 Petroleum effects 701
 Seasonal occurrence 897
Ectoparasite 349
 NT Barnacles 137
 Cyamids 269
 Remora 837
 RT Callosities 165
 Endoparasite 365
 Electric whaling
 Whaling techniques 432
 Electrocardiogram
 Brain 173
 Evoked potentials 381
 Heart 489
 Nervous system 681
Endocrine system 361
 NT Glands 775
 Hormones 498
Endoparasite 365
 · RT Ectoparasite 349
 Medical care 831
 Pathology 749

CETACEA Database SUBJECT HEADINGS

- Energetics 369
 - RT Body temperature 159
 - Digestive system 301
 - Diving physiology 325
 - Food 422
 - Locomotion 597
 - Metabolism 637
 - Respiratory system 861
 - Speed 870
 - Stomach contents 486
 - Thermoregulation 583
 - Water temperature 539
- Entrapment 371
 - NT Ice entrapment 877
 - RT Captivity 193
 - Capture techniques 197
 - Dolphin fishery 735
 - Incidental catch 525
 - Mass stranding 275
 - Ship injury 535
 - Stranding dead 931
 - Stranding live 665
 - Sealing 893
 - Whaling 938
 - Whaling techniques 432
- Environment
 - Behavioral ecology 139
 - Contaminants 245
 - Extinction 393
 - Geographic distribution 455
 - Habitat conservation 241
 - Habitat preference 575
 - Home range 493
 - Petroleum effects 701
 - Protectionism 815
 - Seasonal occurrence 897
- Epidermis
 - Blubber 161
 - Barnacles 137
 - Callosities 165
 - Cyamids 269
 - Dermal hardening 285
 - Ectoparasite 365
 - Remora 837
 - Skin 373
- Epimeletic
 - Care giving 201
 - Parental 617
 - Social behavior 957
- Equipment special 375
 - see Instruments.

CETACEA Database SUBJECT HEADINGS

Escort

Care giving 201
Juvenile 557
Parental 617
Reproduction 845
Sexual behavior 929
Social behavior 957

Evoked potentials 381

RT Brain 173
Hearing 487
Nervous system 681

Evolution 385

RT Extinction 393
Osteology 717
Paleontology 733
Systematics 978
Vestigial organs 210

Excrescences

Callosities 165
Dermal hardening 285

Excretion 389

RT Ambergris 810
Digestive system 301
Food 422

Explosives

Noise seismic exploration 909
Whaling techniques 432

Extinction 393

RT Mortality 657
Population models 785
Population trends 528
Stock assessment 725
Stock management 955

Eye 880

-- see vision, various subjects.
RT In air vision 523
Underwater vision 445
Visual physiology 825

Fats oils waxes 401

-- from marine mammals, not petroleum.
NT Spermaceti 464
RT Blubber 161
Melon 629

Feces

Excretion 389

Feeding 404

NT Bubble feeding 181
Coordinated feeding 402
Lunge feeding 406
Skim feeding 407
Suction feeding 408
BT Food 422

CETACEA Database SUBJECT HEADINGS

- Feeding 404 (continued)
 RT Baleen 129
Benthos as food 423
Competition 235
Digestive system 301
Fish as food 425
Fish marine mammal 941
Mammals as food 429
Metabolism 637
Mouth 660
Plankton as food 433
Schooling 889
Squid as food 437
Stomach contents 486
Throat 249
Tongue 727
Ventral grooves 673
- Field identification guide 409
 RT Callosities 165
Field marks 413
Field observations 451
Geographic distribution 455
Group size 715
Individual identification 529
Key 561
Pigmentation 233
Scientific nomenclature 685
- Field marks 413
 RT Callosities 165
Ectoparasite 349
Fin 137
Flukes 421
Individual identification 529
Pigmentation 233
- Field observations 451
 RT Field identification guide 409
Field marks 413
Group size 715
Individual identification 529
Phonation 761
Social organization 959
Sound production 997
- Fin 337
 -- includes dorsal carina.
 RT Flippers 419
Flukes 421
Tail 869
- Fish aging
Otoliths 721

CETACEA Database SUBJECT HEADINGS

- Fish as food 425
 - for marine mammals.
 - NT Competition with fisheries 719
 - BT Food 422
 - RT Benthos as food 423
 - Bubble feeding 181
 - Feeding 404
 - Scattering layer 885
 - Squid as food 437
- Fishery for marine mammals
 - Competition with fisheries 719
 - Dolphin fishery 735
 - Human marine mammal interaction 881
 - Incidental catch 525
 - Sealing 893
 - Whaling 938
- Fish hearing 415
 - audiograms, mechanisms of hearing in fish.
 - BT Audiogram 109
 - Hearing 487
 - RT Auditory physiology 121
 - Ear 113
 - Lateral line 581
 - Otoliths 721
 - Swim bladder 888
- Fish marine mammal 941
 - interactions between fish and marine mammals
 - RT Entrapment 731
 - Incidental catch 525
 - Mixed species 654
- Fish sounds 417
 - RT Fish hearing 415
 - Lateral line 581
 - Swim bladder 888
- Flippers 419
 - RT Aerial behavior 250
 - Fin (and dorsal carina) 337
 - Flukes 421
 - Locomotion 597
- Flukes 421
 - sometimes includes flippers.
 - RT Aerial behavior 250
 - Fin 337
 - Flippers 419
 - Fluking 424
 - Locomotion 597
 - Tail 869
- Fluking 424
 - BT Aerial behavior 250
 - RT Breaching 177
 - Diving 321
 - Flukes 421
 - Splashes 163

CETACEA Database SUBJECT HEADINGS

Focus

Acoustic lens 130
Directional hearing 993
Eye 880
Sound directionality 985
Sound production 997
 Visual, various subjects.

Foetus 405

NT Multiplets 661
 RT Age and growth 314
 Birth 745
 Growth rate 465
 Neonate 315
 Sex ratio 921

Food 422

-- for animals.
 NT Benthos as food 423
 Energetics 369
 Fish as food 425
 Mammals as food 429
 Plankton as food 433
 Squid as food 437
 RT Digestive system 301
 Excretion 389
 Feeding 404
 Lactation 569
 Metabolism 637
 Scattering layer 885
 Schooling 889
 Stomach contents 486
 Weaning 742

Formulae

Baleen count 707
Dental formula 747
Phalangeal formula 543
Vertebral formula 740

Fossils

Evolution 385
Museum collections 738
Osteology 717
Paleontology 733
Vestigial organs 210

Frequency discrimination

Acoustic location 170
Hearing 487
Sound directionality 985

Friendly whale

Human marine mammal interaction 881

Fur

Hair 471
Molt 257
Skin 373

CETACEA Database SUBJECT HEADINGS

GARR

- Mark recapture 609
- Mortality 657
- Population models 785
- Recruitment 449
- Stock assessment 725
- Tagging 753
- General observations
 - Cetacean general 171
 - general information.
 - Field observations 451
 - general observations.
 - Geographic distribution 455
 - sightings, occurrence.
 - Pinniped general 118
 - general information.
- Genetics 452
 - RT Karyotype 883
 - Sex determination 925
 - Sex Ratio 921
- Genitalia 453
 - BT Reproductive system 849
 - RT Field marks 413
 - Individual identification 529
 - Mating 621
 - Sex ratio 921
 - Sexual behavior 929
 - Sexual maturity 989
- Geographic distribution 455
 - sightings and occurrence records, distribution.
 - RT Census techniques 205
 - Field observations 451
 - general.
 - Habitat preference 575
 - Home range 493
 - Population trends 528
 - Seasonal occurrence 897
 - Stock assessment 725
 - Territoriality 700
- Geographic range
 - Geographic distribution 455
 - Habitat conservation 241
 - Habitat preference 575
 - Home range 493
 - Seasonal occurrence 897
 - Territoriality 700
- Geologic noise 335
 - BT Ambient noise 850
 - RT Noise seismic exploration 909

CETACEA Database SUBJECT HEADINGS

Gestation 457
 BT Reproduction 845
 RT Birth 745
 Foetus 405
 Juvenile 557
 Mating 621
 Neonate 315
 Parental 617
 Reproductive interval 189

Glands 775
 -- misc. glands and organs.
 RT Endocrine system 361
 Hormones 497
 Metabolism 637
 Vestigial organs 210

Grooming 461
 -- pinniped.
 RT Care giving 201
 Hair 471
 Sexual behavior 929
 Skin 373
 Social behavior 957

Group size 715
 RT Field observations 715
 Social organization 959
 Census techniques 205
 Stock assessment 725

Growth
 Age and growth 314
 Growth rate 465
 Juvenile 557
 Sexual maturity 989

Growth rate 465
 NT Age estimation baleen 370
 Age estimation bone 390
 Age estimation corpora lutea 410
 Age estimation ear plug 450
 Age estimation tag returns 490
 Age estimation teeth 530
 BT Age and growth 314
 RT Allometry 750
 Dimensions 305
 Foetus 405
 Juvenile 557
 Lifespan 884
 Neonate 315
 Sexual maturity 989

Guide
 Field identification guide 409
 Individual identification 529
 Scientific nomenclature 685

CETACEA Database SUBJECT HEADINGS

Gular

Feeding 404
Larynx 577
Mouth 660
Muscles 669
Stomach contents 486
Throat 249
Tongue 727
Ventral grooves 673

Habitat conservation 241
 RT Behavioral ecology 139
Geographic distribution 455
Habitat preference 575
Home range 493
Protectionism 815
Seasonal occurrence 897
Territoriality 700

Habitat preference 575
 RT Geographic distribution 455
Home range 493
Seasonal occurrence 897
Territoriality 700

Hair 471
 RT Grooming 461
Molt 254
Skin 373
Vibrissae 631

Harmonic 473
 RT Acoustic analysis techniques 400
Phonation 761
Sound spectra 303

Harpoon 477
 RT Sealing 893
Whaling techniques 432

Haul-out 481
 RT Dominance hierarchy 333
Pinniped general 118
Sexual behavior 929
Social behavior 957
Social organization 959

Healing 485
 BT Pathology 749
 RT Individual identification 529
Medical care 831
Pigmentation 233

Health care
Captivity 193
Healing 485
Medical care 831
Pathology 749

CETACEA Database SUBJECT HEADINGS

Hearing 487
 -- underwater hearing.
 NT Critical bandwidth 261
 Directional hearing 993
 Fish hearing 415
 RT Acoustic location 170
 Audiogram 109
 Auditory physiology 121
 Ear 113

Hearing 487 (continued)
 Hydrodynamic sound 507
 In air hearing 521
 In air sounds 552
 Masking 613
 Sound directionality 985
 Sound spectra 303
 Target strength 342

Heart 489
 RT Blood 917
 Vascular system 223

Hematology
 Blood 917

Historical
 Evolution 385
 Museum collections 738
 Population trends 528
 Whaling historical, logbooks 924

Home range 493
 RT Geographic distribution 455
 Habitat preference 575
 Seasonal occurrence 897
 Territoriality 700
 Tracking 664

Hormones 497
 BT Endocrine system 361
 Glands 775

Human marine mammal interaction 881
 -- approach by marine mammals.
 BT Mixed species 645
 RT Competition with fisheries 719
 Dolphin fishery 735
 Incidental catch 525
 Sealing 893
 Whaling 938

Hunting
 Dolphin fishery 735
 -- catch of dolphins by humans.
 Incidental catch 525
 Predation 793
 -- by animals.
 Predator defense 801
 Sealing 893
 Whaling 938

CETACEA Database SUBJECT HEADINGS

Hybrid 501
 RT Genetics 452
 Karyotype 883
 Mixed species 645
 Reproduction 845
Hydrodynamic 505
 -- effects of water motion.
 NT Hydrodynamic sound 507
 RT Locomotion 597
 Skin 373
 Wave riding 160
Hydrodynamic sound 507
 -- sounds produced by water movement, not air.
 BT Hydrodynamic 505
Hydrophone 509
 RT Acoustic location 170
 Recording system 829
 Sonobuoy 973
 Sound directionality 985
 Sound projector 805
 Sound source level 555
 Sound spectra 303
Ice 513
 -- influence on animals, sounds.
 RT Entrapment 371
 Ice entrapment 877
Ice entrapment 877
 BT Entrapment 371
 RT Incidental catch 525
 Oceanographic features 697
 Water temperature 539
 Weather 611
Imitation 517
 RT Coda 225
 Individual identification 529
 Intelligence 545
 Learning 582
 Phonation 761
 Signature signal 935
 Social learning 956
 Vocal learning 548
In air hearing 521
 RT Audiogram 109
 Hearing 487
 -- underwater.
 In air sounds 522
In air sounds 522
 -- air-borne sounds.
 RT Blow 153
 Call 174
 In air hearing 521

CETACEA Database SUBJECT HEADINGS

In air vision 523

-- see visual, various subjects.

RT Eye 880

Underwater vision 445

Visual communication 237

Incidental catch 525

RT Captivity 193

Capture techniques 197

Competition with fisheries 719

Dolphin fishery 735

Entrapment 371

-- by human artifacts.

Fish marine mammal 941

Ice entrapment 877

Ship injury 535

Individual identification 529

-- Identification of individual animals by humans

BT Tagging 753

RT Callosities 165

Coda 225

Field identification guide 409

Field marks 413

Field observations 415

Pigmentation 233

Satellite 873

Signature signal 953

Telemetry 828

Tracking 664

Industrial

Ambient noise 850

Competition with fisheries 719

Dolphin fishery 735

Human marine mammal interaction 881

Noise industrial 533

Noise aircraft 650

Noise ship 277

Petroleum effects 701

Infant

Age and growth 314

Growth rate 465

Juvenile 557

Multiplets 661

Neonate 315

Parental 617

Weaning 742

Instrument

Amplifier 890

Equipment special 375

Hydrophone 509

Pinger 777

Recording system 829

CETACEA Database SUBJECT HEADINGS

Instrument (continued)

- Sonar 961
- Sonobuoy 973
- Sound projector 805
- Theodolite 112
- Video 265
- Intelligence 545
 - RT Brain 173
 - Cognition 229
 - Learning 582
 - Imitation 517
 - Memory 633
 - Social learning 956
 - Vocal learning 548
- IWC 553
 - about International Whaling Commission, not by IWC.
 - RT Population trends 528
 - Whaling 938
 - Whaling historical, logbooks 924
 - Whaling quotas 794
 - Whaling statistics 167
 - Whaling techniques 432
- Interspecies interaction
 - Bird marine mammal 605
 - Fish marine mammal 941
 - Human marine mammal interaction. 881
 - Hybrid 501
 - Mixed species 645
- Juvenile 557
 - NT Foetus 405
 - Multiplets 661
 - Neonate 315
 - RT Age and growth 314
 - Birth 745
 - Growth rate 465
 - Lactation 569
 - Parental 617
 - Weaning 742
- Karyotype 883
 - RT Genetics 452
 - Hybrid 501
 - Sex determination 925
- Key 561
 - species identification key.
 - RT Diagnosis taxonomic 935
 - Field identification guide 409
 - Field observations 451
 - Individual identification 529
 - Scientific nomenclature 685
 - Systematics 978
 - Taxonomy 287

CETACEA Database SUBJECT HEADINGS

Kidney 565
 RT Metabolism 637
 Osmoregulation 713

Lactation 569
 RT Birth 745
 Juvenile 557
 Neonate 515
 Parental 617
 Weaning 742

Larynx 577
 BT Respiratory system 861
 RT Lungs 317
 Phonation 761
 Sound production 997

Lateral line 581
 BT Fish hearing 415
 RT Audiogram 109
 Fish sounds 417
 Hydrodynamic sounds 507
 Swim bladder 888

Learning 582
 -- not involving human training.
 NT Social learning 958
 Vocal learning 548
 RT Brain 173
 Cognition 229
 Imitation 517
 Intelligence 545
 Memory 633
 Training 915

Length measurements
 Allometry 750
 Dimensions 305
 Field marks 413
 Photographic techniques 765
 Whaling statistics 167

Lens
 Acoustic lens 130
 Eye 880
 Photographic techniques 765

Level
 Sound source level 555
 Sound spectra 303

Lifespan 884
 -- see age estimation, various subjects.
 RT Age and growth 314
 Mortality 657
 Population models 785
 Population trends 528

CETACEA Database SUBJECT HEADINGS

Line transect
 Noise aircraft 650
 Noise ship 277
 Census techniques 205
 Geographic distribution 455
 Stock assessment 725
 Lipids
 Fats oils waxes 401
 Literature references 590
 -- having noteworthy references.
 RT Literature review 593
 -- of a subject.
 Review 169
 -- of a publication.
 Literature review 593
 -- of a subject.
 RT Literature references 590
 -- having noteworthy references.
 Review 169
 -- of a publication.
 Liver 772
 RT Digestive system 301
 Food 422
 Metabolism 637
 Lobtailing
 Aerial behavior 250
 Breaching 177
 Flukes 421
 Fluking 424
 Localization
 Acoustic location 170
 Directional hearing 993
 Hearing 487
 Hydrophone 509
 Sonobuoy 973
 Sound directionality 985
 Locomotion 597
 RT Flippers 421
 Flukes 419
 Hydrodynamic 505
 Migration 641
 Speed 780
 Tail 869
 Wave riding 160
 Lunge feeding 406
 BT Feeding 404
 RT Fish as food 425
 Food 422
 Ventral grooves 673
 Lungs 317
 BT Respiratory system 861
 RT Blow 153

CETACEA Database SUBJECT HEADINGS

Magnetic 602
 -- sensitivity to magnetic fields.
 RT Orientation 709

Mammals as food 429
 -- for marine animals.
 BT Food 422
 RT Feeding 404
 Predation 793
 Predator defense 801

Mammary glands
 Lactation 569
 Neonate 315
 Parental 617
 Weaning 742

Management
 Census techniques 205
 Geographic distribution 455
 Mark recapture 609
 Population models 785
 Population trends 528
 Recruitment 449
 Seasonal occurrence 897
 Stock management 955
 Tagging 753

Mark recapture 609
 RT Age estimation tag returns 490
 Coda 225
 Individual identification 529
 Pigmentation 233
 Population models 785
 Recruitment 449
 Signature signal 953
 Stock assessment 725
 Tagging 753
 Tracking 664

Masking 613
 NT Critical bandwidth 261
 RT Ambient noise 850
 Geologic noise 335
 Hearing 487
 Military effects 763
 Noise aircraft 650
 Noise industrial 533
 Noise seismic exploration 909
 Noise ship 277
 Rain 821
 Sound spectra 303
 Splashes 163
 Weather 611

CETACEA Database SUBJECT HEADINGS

Mass stranding 275
 BT Stranding live 665
 RT Entrapment 371
 Mortality 657
 Pathology 749
 Stranding dead 931

Mating 621
 BT Reproduction 845
 Sexual behavior 929
 RT Competition 235
 Genitalia 453
 Hybrid 501
 Reproductive system 849
 Sexual maturity 989

Meat 625
 -- commercial consumption
 RT Dolphin fishery 735
 Sealing 893
 Whaling 938

Medical care 831
 RT Captivity 191
 Healing 485
 Pathology 749

Melon 629
 RT Fats oils waxes 401
 Sound directionality 985
 Sound production 444
 Spermaceti 464

Memory 633
 -- psychophysical tests.
 RT Brain 173
 Cognition 229
 Imitation 517
 Individual identification 529
 Intelligence 545
 Learning 582
 Signature signal 953
 Social learning 956
 Vocal learning 548

Metabolism 637
 RT Body temperature 159
 Energetics 369
 Food 422
 Kidney 565
 Liver 772
 Respiration rate 857
 Stomach contents 486

Migration 641
 RT Geographic distribution 455
 Habitat preference 575
 Locomotion 597
 Seasonal occurrence 897
 Speed 780

CETACEA Database SUBJECT HEADINGS

Military effects 763
 RT Mortality 657
 Noise ship 277
 Ship injury 535
 see Disturbance, various subjects.

Milk
 Juvenile 557
 Lactation 569
 Neonate 315
 Weaning 742

Mimicry
 Coda 225
 Cognition 229
 Imitation 517
 Individual identification 529
 Learning 582
 Signature signal 953
 Social learning 956
 Vocal learning 548

Mixed species 645
 -- aggregations or interactions of more than one species.
 NT Bird marine mammal 605
 Fish marine mammal 941
 Human marine mammal interaction 881
 Hybrid 501

Molt 254
 RT Hair 471
 Skin 373

Mortality 657
 NT Stranding dead 931
 RT Contaminants 245
 Dolphin fishery 735
 Entrapment 371
 Ice entrapment 877
 Incidental catch 525
 Military effects 763
 Mass stranding 275
 Pathology 749
 Petroleum effects 701
 Population models 785
 Recruitment 449
 Ship injury 535
 Stranding live 665
 Sealing 893
 Whaling 938
 Whaling quotas 794
 Whaling statistics 167
 Whaling techniques 432

CETACEA Database SUBJECT HEADINGS

Mouth 660
 -- sometimes includes tongue, rostral adaptations.
 RT Baleen 129
 Feeding 404
 Larynx 577
 Teeth 755
 Throat 249
 Tongue 727
 Ventral grooves 673

Multiplets 661
 RT Birth 745
 Foetus 405
 Gestation 457
 Juvenile 557
 Neonate 315

Muscles 669
 RT Energetics 369
 Locomotion 597
 Metabolism 637

Museum collections 738
 RT Osteology 717
 Skull 257

Myology
 Locomotion 597
 Muscles 669

Myths
 Yarn 367

Nasal passages
 Blowhole 157
 Nose 689
 Sound production 997

Neonate 315
 BT Multiplets 661
 RT Birth 745
 Foetus 405
 Lactation 569

Nervous system 681
 NT Brain 173

Net entrapments
 Captivity 193
 Capture techniques 197
 Competition with fisheries 719
 Dolphin fishery 735
 Entrapment 371
 Incidental catch 525
 Whaling techniques 432

Neurophysiology
 Brain 173
 Nervous system 681

CETACEA Database SUBJECT HEADINGS

Noise aircraft 650
 RT Ambient noise 850
 Masking 613
 Military effects 763
 Noise geologic 335
 Noise industrial 533
 Noise seismic exploration 909
 Noise ship 277
Noise industrial 533
 -- as from petroleum production.
 RT Ambient noise 850
 Geologic noise 335
 Masking 613
 Noise aircraft 650
 Noise geologic 335
 Noise seismic exploration 909
 Noise ship 277
 Petroleum effects 701
Noise seismic exploration 909
 BT Noise industrial 533
 RT Ambient noise 850
 Geologic noise 335
 Masking 613
 Noise ship 277
 Petroleum effects 701
Noise ship 277
 RT Ambient noise 850
 Masking 613
 Military effects 763
 Noise aircraft 650
 Noise industrial 533
 Nomenclature
 Diagnosis taxonomic 935
 Scientific nomenclature 685
 Systematics 978
 Taxonomy 287
 Vernacular names 329
Nose 689
 BT Respiratory system 861
 RT Blowhole 157
 Olfaction 705
 Nursing
 Lactation 569
 Neonate 315
 Parental 617
 Weaning 742
Object interaction 693
 BT Social play 958
Oceanographic features 697
 NT Tides 238
 Water temperature 539
 RT Weather 611

CETACEA Database SUBJECT HEADINGS

Oil

Fats oils waxes 401
 -- excludes petroleum.
Petroleum effects 701

Olfaction 705

RT Chemoreception 213
Taste 469

Organs, miscellaneous

Digestive system 301
Ear 113
Eye 880
Glands 775
Genitalia 453
Heart 489
Kidney 565
Larynx 577
Liver 772
Lungs 317
Melon 629
Nervous system 681
Reproductive system 849
Respiratory system 861
Tongue 727
Vascular system 223
Vestigial organs 210
Viscera 215

Orientation 709

RT Acoustic location 170
Echolocation 345
Magnetic 602
Sound directionality 985
 see visual, various subjects.

Osmoregulation 713

RT Kidney 565

Osteology 717

NT Age estimation bone 390
Dental formula 747
Evolution 835
Paleontology 733
Pelvis 319
Phalangeal formula 543
Skull 257
Teeth 755
Vertebral formula 740

Otoliths 721

-- fish.
 RT Age and growth 314
Fish as food 425
Stomach contents 486

CETACEA Database SUBJECT HEADINGS

Ovaries
Age estimation corpora lutea 410
Genitalia 453
Reproduction 845
Reproductive system 849
Sexual maturity 989

Paleontology 733
 RT Evolution 385
Osteology 717
Vestigial organs 210

Parasites
Cyamids 269
Ectoparasite 349
Endoparasite 365
Medical care 831
Pathology 749

Parental 617
 RT Birth 745
Care giving 201
Juvenile 557
Lactation 569
Multiplets 661
Neonate 315
Social behavior 957
Weaning 742

Parturition
Birth 745
Foetus 405
Gestation 457
Neonate 315
Parental 617
Reproduction 845
Reproductive interval 189

Pathology 749
 RT Endoparasite 365
Healing 485
Mass stranding 275
Medical care 831
Ship injury 535
Stranding dead 931
Stranding live 665
Teratology 811

Pectoral fin
Flippers 419

Pelvis 319
 RT Evolution 384
Osteology 717
Paleontology 733

Penis
Genitalia 453
Mating 621
Reproductive system 849
Sexual behavior 929

CETACEA Database SUBJECT HEADINGS

Petroleum effects 701
 RT Contaminants 245
 Medical care 831
Phalangeal formula 543
 RT Baleen cound 707
 Dental formula 747
 Vertebral formula 740
Phonation 761
 -- sounds produced with air mechanisms.
 NT Call 174
 Click 221
 Coda 225
 Dialect 289
 Distress call 309
 Echolocation 345
 Signature signal 953
 Song 965
 Whistle 395
 RT Acoustic communication 900
 Fish sounds 417
 Harmonic 473
 Hydrodynamic sound 507
 -- sounds produced by water movement, not air.
 Sound directionality 985
 Sound production 997
 Voice 377
Photoperiod 273
 RT Diel 293
Photographic techniques 765
 RT Allometry 750
 Dimensions 305
 Field identification guide 409
 Field marks 413
 Individual identification 529
 Photoperiod 273
Physiology
 Auditory physiology 121
 Body temperature 159
 Digestive system 301
 Diving physiology 325
 Metabolism 637
 Nervous system 681
 Osmoregulation 713
 Respiratory system 861
 Thermoregulation 583
 Vascular system 223
 Visual physiology 825
Picture
 -- a separate database field (PI).
 Photographic techniques 765

CETACEA Database SUBJECT HEADINGS

Pigmentation 233
 RT Albinism 730
 Callosities 165
 Ectoparasite 349
 Field marks 413
 Healing 485
 Individual identification 529
 Skin 373
Pinger 777
Pinniped general 118
 RT Cetacean general 171
Pitchpoling
 -- spyhopping.
 Aerial behavior 250
 Breaching 177
Plankton as food 433
 BT Food 422
 RT Benthos as food 423
 Bioluminescence 145
 Feeding 404
 Fish as food 425
 Scattering layer 885
Play with objects
 Object interaction 693
 Social play 958
Playback 781
 -- playback of sound.
 RT Acoustic communication 900
 Phonation 761
 Sound projector 805
Pollutants
 Contaminants 245
 Noise aircraft 650
 Noise industrial 533
 Noise seismic exploration 909
 Noise ship 277
 Petroleum effects 701
Population control
 Dolphin fishery 735
 Incidental catch 525
 Population trends 528
 Sealing 893
 Stock management 955
 Whaling 938
Population models 785
 RT Group size 715
 Mark recapture 609
 Mortality 657
 Population trends 528
 Recruitment 449
 Sex ratio 921
 Stock assessment 725
 Stock management 955

CETACEA Database SUBJECT HEADINGS

Population trends 528
 RT Population models 785
 Recruitment 449
 Sealing 893
 Stock management 955
 Whaling 938
 Whaling historical, logbooks 924

Predation 793
 -- by animals.
 RT Agonistic behavior 570
 Fish marine mammal 941
 Feeding 404
 Mammals as food 429
 Predator defense 801

Predator defense 801
 RT Agonistic behavior 570
 Fish marine mammal 941
 Predation 793

Pressure adaptation
 Dive depth 281
 Diving 321
 Diving physiology 325
 Respiration rate 857

Protectionism 815
 RT Behavioral ecology 139
 Habitat conservation 241
 Habitat preference 575
 Stock assessment 725

Pulsed sound
 Acoustic analysis techniques 400
 Click 221
 Echolocation 345
 Harmonic 473
 Phonation 761
 Sound production 997

Pup Rearing
 Age and growth 314
 Care giving 201
 Haul-out 481
 Juvenile 557
 Lactation 569
 Neonate 315
 Parental 617
 Weaning 742

Radio tag
 Individual identification 529
 Mark recapture 609
 Tagging 753
 Telemetry 828
 Tracking 664

CETACEA Database SUBJECT HEADINGS

Rain 821
 RT Ambient noise 850
 Masking 613
 Splashes 163

Recognition
 Callosities 165
 Coda 225
 Field marks 413
 Individual identification 529
 Pigmentation 233
 Signature signal 953

Recording system 829
 See instruments, various subjects.
 RT Acoustic analysis techniques 400
 Amplifier 890
 Hydrophone 509
 Sonobuoy 973

Recruitment 449
 BT Stock assessment 725
 RT Birth 745
 Mortality 657
 Population models 785
 Population trends 528
 Reproductive interval 189
 Sex ratio 921
 Stock management 955

Release
 Captive release 677
 Captivity 193
 Capture techniques 197
 Entrapment 371
 Incidental catch 525

Remora 837
 BT Ectoparasite 349
 -- includes Echiniid fish.

Remote sensing
 Photographic techniques 765
 Satellite 873
 Tagging 753
 Telemetry 828
 Tracking 664

Reproduction 845
 NT Hybrid 501
 Mating 621
 Reproductive interval 189
 Reproductive season 515
 Reproductive system 849
 RT Age estimation corpora lutea 410
 Birth 745
 Competition 235
 Foetus 405
 Genitalia 453
 Genetics 452

CETACEA Database SUBJECT HEADINGS

Reproduction 845 (continued)

Gestation 457
Karyotype 883
Multiplets 661
Neonate 315
Recruitment 449
Sex determination 925
Sex ratio 921
Sexual behavior 929
Sexual maturity 989
Social behavior 957
Social organization 959
Song 965

Reproductive interval 189

-- calving intervals.
 BT Reproduction 845
 RT Age and growth 314
Age estimation corpora lutea 410
Birth 745
Gestation 457
Multiplets 661
Recruitment 449
Reproductive season 515
Sexual maturity 989

Reproductive season 515

NT Reproductive interval 189
 RT Geographic distribution 455
Seasonal occurrence 897

Reproductive system 849

-- includes ovaries, testes.
 NT Genitalia 453
Gestation 457
Mating 621
 BT Reproduction 845
 RT Reproductive season 515
Sexual behavior 929
Sexual maturity 989

Respiration

Blow 153
Dive depth 281
Diving physiology 325
Lungs 317
Respiration rate 857
Respiratory system 861

Respiration rate 857

-- blow rates and numbers, surface time,
 RT Blow 153
Dive depth 281
Diving physiology 325
Metabolism 637
Respiratory system 861
Underwater blow 817

CETACEA Database SUBJECT HEADINGS

Respiratory system 861
 -- includes anatomy, tidal volume.
 NT Blowhole 157
 Lungs 317
 Nose 689
 RT Blow 153
 Respiration rate 857
 Underwater blow 817
Resting behavior 863
 RT Sleep 927
Review 169
 -- of a publication.
 RT Biography 757
 Cetacean general 171
 Literature references 590
 -- paper having noteworthy references.
 Literature review 593
 -- subject review.
 Pinniped general 118
Salinity tolerance
 Kidney 565
 Osmoregulation 713
Satellite 873
 -- monitoring radio tags, remote sensing.
 BT Telemetry 828
 Tracking 664
 RT Mark recapture 609
Savssat
 Ice 513
 Ice entrapment 877
Scars
 Field marks 413
 Healing 485
 Individual identification 529
 Pathology 749
 Pigmentation 233
 Ship injury 535
 Skin 373
Scattering layer 885
 RT Bioluminescence 145
 Fish as food 425
 Food 422, various subjects.
 Sonar 961
 Squid as food 437
 Swim bladder 888
 Target strength 342
Schooling 889
 RT Feeding 404, various subjects
 Fish as food 425
 Group size 715
 Lunge feeding 406
 Social organization 959

CETACEA Database SUBJECT HEADINGS

Scientific nomenclature 685
 RT Diagnosis taxonomic 935
 Key 561
 Systematics 978
 Taxonomy 287
 Vernacular names 329
Sea conditions
 Ambient noise 805
 Oceanographic features 697
 Water temperature 539
 Weather 611
Sea story
 Collector's troubles 397
 Yarn 367
Sealing 893
 RT Dolphin fishery 735
 Incidental catch 525
 Pinniped general 118
 Whaling 938
Seasonal occurrence 897
 RT Geographic distribution 455
 Home range 493
 Reproductive season 515
 Territoriality 700
Secondary sexual characters
 Allometry 750
 Dimensions 305
 Sex ratio 921
 Sexual dimorphism 933
 Sexual maturity 989
Senses
 Chemoreception 213
 Hearing 487
 -- underwater hearing.
 In air hearing 521
 In air vision 523
 Magnetic 602
 Olfaction 705
 Taste 469
 Touch 800
 Underwater vision 445
Serology
 Blood 917
 Heart 489
 Vascular system 223
Sex determination 925
 RT Genetics 452
 Genitalia 453
 Karyotype 883

CETACEA Database SUBJECT HEADINGS

Sex ratio 921
 RT Genetics 452
 Mortality 657
 Multiplets 661
 Population models 785
 Recruitment 449
 Sexual dimorphism 933
 Social organization 959

Sexual behavior 929
 -- excluding copulation.
 NT Mating 621
 -- copulation.
 RT Agonistic behavior 570
 Competition 235
 Dominance heirarchy 333
 Reproduction 845
 Reproductive season 515
 Sexual maturity 989
 Social behavior 957
 Song 965

Sexual dimorphism 933
 RT Dimensions 305
 Fin 337
 Growth rate 465
 Genitalia 453
 Reproductive system 849
 Sexual maturity 989

Sexual grouping
 Group size 715
 Mating 621
 Reproductive season 515
 Social organization 959

Sexual maturity 989
 RT Growth rate 465
 Reproduction 845
 Reproductive system 849
 Sexual behavior 929

Shark
 Agonistic behavior 570
 Fish marine mammal 941
 Mixed species 645
 Predator defense 801

Ship injury 535
 -- injury to marine mammals by ships.
 RT Military effects 763
 Mortality 657
 Noise ship 277

Side band
 Acoustic analysis techniques 400
 Harmonic 473
 Sound spectra 303

CETACEA Database SUBJECT HEADINGS

Sight

Eye 880
In air vision 523
Underwater vision 445
Visual communication 237
Visual physiology 825

Sightings

Census techniques 205
Field marks 413
Field observations 451
Geographic distribution 455
Group size 715
Habitat preference 575
Home range 493
Individual identification 529
Seasonal occurrence 897

Signature signal 953

-- individual identity sounds.
 NT Coda 225
 BT Phonation 761
 RT Individual identification 529
Sound spectra 303
Voice 377

-- in-air sounds produced by innate vocal mechanism.

Size

Dimensions 305
Field marks 413
Group size 715
Photographic techniques 765
Weight in air 418
Weight in water 819
Whaling statistics 167

Skeleton

Museum collections 738
Osteology 717
Paleontology 733
Pelvis 319
Skull 257

Skim feeding 407

BT Feeding 404
 RT Fish as food 425
Food 422
Plankton as food 433

Skin 373

RT Blubber 161
Callosities 165
Dermal hardening 285
Hair 471
Hydrodynamic 505
Molt 254
Pigmentation 233
Thermoregulation 583

CETACEA Database SUBJECT HEADINGS

Skull 257
 BT Museum collections 738
 Osteology 717
 Paleontology 733
 Systematics 978
 Taxonomy 287

Sleep 927
 RT Resting behavior 863

Social behavior 957
 RT Agonistic behavior 570
 Competition 235
 Dominance hierarchy 333
 Group size 715
 Mating 621
 Parental 617
 Sexual behavior 929
 Social organization 959
 Social play 958

Social learning 956
 BT Learning 582, various subjects
 RT Cognition 229
 Imitation 517
 Vocal learning 548

Social organization 959
 RT Dominance hierarchy 333
 Sexual behavior 929
 Social behavior 957

Social play 958
 NT Object interaction 693
 RT Social behavior 957

Sonar 961
 -- sound echo-ranging by humans.
 RT Echolocation 345
 -- by animals.
 Dive depth 281
 Scattering layer 885
 Swim bladder 888
 Target strength 342

Song 965
 -- animal phonations as song.
 BT Phonation 761
 RT Reproduction 845
 Reproductive season 515
 Seasonal occurrence 897
 Sexual behavior 929

Sonobuoy 973
 RT Hydrophone 509
 Phonation 761
 Recording system 829
 Telemetry 828

CETACEA Database SUBJECT HEADINGS

Sound

Acoustic analysis techniques 400
Acoustic census 500
Acoustic communication 900
Acoustic lens 130
Acoustic location 170
Ambient noise 850
Audiogram 109
Blow 153
Call 174
Click 221
Coda 225
Distress call 309
Echolocation 345
Fish sounds 417
Geologic noise 335
Harmonic 473
Hearing 487
Hydrodynamic sound 507
Hydrophone 509
Imitation 517
In air hearing 521
In air sounds 522
Individual identification 529
Lateral line 581
Masking 613
Noise aircraft 650
Noise industrial 533
Noise seismic exploration 909
Noise ship 277
Orientation 709
Phonation 761, various subjects
Pinger 777
Playback 781
Recording system 829
Scattering layer 885
Signature signal 953
Sonar 961
Song 965
Sonobuoy 973
Sound directionality 985
Sound production 997
Sound projector 805
Sound propagation 444
Sound source level 555
Sound spectra 303
Splashes 163
Swim bladder 888
Target strength 342
Vocal learning 485
Voice 377
Whistle 395

CETACEA Database SUBJECT HEADINGS

Sound analysis

Acoustic analysis techniques 400
Acoustic location 170
Harmonic 473
Sound source level 555
Sound spectra 303

Sound channel

Oceanographic features 697
Sound directionality 985
Sound propagation 444
Water temperature 539

Sound directionality 985

-- directional propagation of sound.

RT Directional hearing 993
Echolocation 345
Orientation 709
Phonation 761
Sound propagation 444

Sound gear

-- see instruments, various subjects.

Acoustic analysis techniques 400
Amplifier 890
Hydrophone 509
Pinger 777
Recording system 829
Sonar 961
Sonobuoy 973
Sound projector 805

Sound localization

Acoustic analysis techniques 400
Acoustic location 170
Sound directionality 985
Sound propagation 444
Sound source level 555
Sound spectra 303

Sound production 997

RT Acoustic lens 130
Aerial behavior 250
Blow 153
Breaching 177
Click 221
Echolocation 345
Harmonic 473
Hydrodynamic sound 507
In air sounds 522
Phonation 761, various subjects
Playback 781
Sound directionality 985
Sound propagation 444
Sound source level 555
Sound spectra 303
Splashes 163

CETACEA Database SUBJECT HEADINGS

Sound projector 805
 RT Playback 781
 Sound propagation 444
 Sound source level 555
 Sound spectra 303
Sound propagation 444
 NT Sound directionality 985
 RT Oceanographic features 697
 Sound production 997
 Sound projector 805
 Sound source level 555
 Target strength 342
Sound scattering
 Echolocation 345
 Scattering layer 885
 Sonar 961
 Swim bladder 888
 Target strength 342
Sound source level 555
 -- measure of absolute sound levels.
 RT Phonation 761
 Recording system 829
 Sound production 997
 Sound projector 805
 Sound propagation 444
 Sound spectra 303
 Target strength 342
Sound spectra 303
 RT Acoustic analysis techniques 400
 Phonation 761
 Sound source level 555
Sound velocity
 Oceanographic features 697
 Sound propagation 444
 Water temperature 539
Source level
 Sound propagation 444
 Sound source level 555
 Sound spectra 303
 Target strength 342
Special gear
 Equipment special 375
 -- see instrument, various subjects.
Speed 780
 -- movement.
 RT Flukes 421
 Locomotion 597
 Migration 641
 Wave riding 160

CETACEA Database SUBJECT HEADINGS

Spermaceti 464
 BT Fats oils waxes 401
 RT Blubber 161
 Melon 629
Splashes 163
 RT Aerial behavior 250
 Ambient noise 850
 Breaching 177
 Fluking 424
 Masking 613
 Rain 821
 Sound production 997
Spout
 Blow 153
 Respiratory system 861
Spyhopping
 Aerial behavior 250
 Breaching 177
Squid as food 437
 BT Food 422
 RT Ambergris 810
 Fish as food 425
Squeal
 Phonation 761
 Whistle 395
Stock assessment 725
 NT Acoustic census 5
 RT Census techniques 205
 Geographic distribution 455
 Mark recapture 609
 Mortality 657
 Population models 785
 Population trends 528
 Recruitment 449
 Seasonal occurrence 897
 Stock management 955
 Tagging 753
Stock management 955
 -- control of population.
 RT Dolphin fishery 735
 Population models 785
 Population trends 528
 Recruitment 449
 Reproductive interval 189
 Sealing 893
 Tagging 753
 Whaling 938

CETACEA Database SUBJECT HEADINGS

Stomach contents 486
 RT Benthos as food 423
 Digestive system 301
 Feeding 404
 Fish as food 425
 Food 422
 Mammals as food 429
 Otoliths 721
 Plankton as food 433
 Squid as food 437
Stranding dead 931
 BT Mortality 657
 RT Incidental catch 525
 Pathology 749
 Stranding live 665
Stranding live 665
 RT Entrapment 371
 Mass stranding 275
 Mortality 657
 Pathology 749
 Stranding dead 931
Strip census
 Census techniques 205
 Field observations 451
 Geographic distribution 455
 Noise aircraft 650
 Noise ship 277
Suction feeding 408
 BT Feeding 404
 RT Benthos as food 423
 Food 422
 Skim feeding 407
Swim bladder 888
 RT Echolocation 345
 Fish as food 425
 Scattering layer 885
 Sonar 961
 Target strength 342
Swimming
 Flukes 421
 Locomotion 597
 Migration 641
 Speed 780
 Wave riding 160
Symbiosis 222
 RT Barnacles 137
 Cyamids 269
 Ectoparasite 439
 Endoparasite 365
 Mixed species 645
 Remora 837

CETACEA Database SUBJECT HEADINGS

Systematics 978

- RT Diagnosis taxonomic 935
- Key 561
- Scientific nomenclature 685
- Taxonomy 287

Tactile

- Flippers 419
- Touch 800
- Hair 471
- Sexual behavior 929
- Skin 373
- Vibrissae 631

Tagging 753

- includes "Discovery marking".
- RT Age estimation tag returns 490
- Individual identification 529
- Mark recapture 609
- Stock assessment 725
- Telemetry 828
- Tracking 664

Tail 869

- tail stock, the "small", "peduncle".
- RT Flukes 421
- Locomotion 597

Target discrimination

- Echolocation 345
- Directional hearing 993
- Feeding 404
- Hearing 487
- Sonar 961
- Sound spectra 303
- Target strength 342
- Underwater vision 445

Target strength 342

- BT Echolocation 345
- Sonar 961
- RT Feeding 404
- Scattering layer 885
- Sound source level 555
- Sound propagation 444

Taste 469

- RT Chemoreception 213
- Feeding 404
- Mouth 660
- Olfaction 705

Taxonomy 287

- RT Diagnosis taxonomic 935
- Field identification guide 409
- Field marks 413
- Key 561
- Scientific nomenclature 685
- Systematics 978

CETACEA Database SUBJECT HEADINGS

Teeth 755
 NT Age estimation teeth 530
 Dental formula 747
 RT Feeding 404
 Osteology 717

Telemetry 828
 BT Tagging 753
 RT Satellite 873
 Tracking 664

Temperature
 Body temperature 159
 Oceanographic features 697
 Thermoregulation 583
 Water temperature 539

Teratology 811
 -- abnormal formations in marine mammals.
 BT Pathology 749

Territoriality 700
 RT Agonistic behavior 570
 Competition 235
 Dominance heirarchy 333
 Geographic distribution 455
 Habitat preference 575
 Home range 493
 Seasonal occurrence 897
 Social behavior 979

Testes
 Genitalia 453
 Sexual maturity 989
 Reproductive system 849

Theodolite 112
 -- see instruments.
 RT Field observations 451
 Equipment special 375
 Tracking 664

Thermoregulation 583
 NT Body temperature 159
 RT Blood 917
 Oceanographic features 697
 Skin 373
 Vascular system 223
 Water temperature 539

Throat 249
 -- sometimes includes mouth.
 RT Digestive system 301
 Feeding 404
 Mouth 660
 Ventral grooves 673

Tidal volume
 Blow 153
 Lungs 317
 Respiratory system 861

CETACEA Database SUBJECT HEADINGS

Tides 238
 RT Diel 293
Oceanographic features 697

Tongue 727
 RT Digestive system 301
Feeding 404
Mouth 660
Throat 249
Ventral grooves 673

Touch 800
 RT Flippers 419
Hair 471
Sexual behavior 929
Skin 373
Vibrissae 631

Tracking 664
 NT Age estimation tag returns 490
Individual identification 529
Satellite 873
Tagging 753
Telemetry 828
Theodolite 112

Training 915
 -- human training of animals.
 RT Imitation 517
Learning 958
 -- not involving human training.
Vocal learning 548

Tuna porpoise
Entrapment 371
Fish marine mammal 941
Incidental catch 525
Mixed species 645

Underwater blow 817
 BT Blow 153
 RT Bubble feeding 181
Diving 321
Diving physiology 325
Feeding 404
Respiration rate 857
Respiratory system 861

Underwater hearing
Ear 113
Directional hearing 933
Hearing 487
In air hearing 521.

Underwater vision 445
 -- see visual, various subjects.
 RT Bioluminescence 145
Eye 880
In air vision 523
Visual physiology 825

CETACEA Database SUBJECT HEADINGS

Vascular system 223
 RT Blood 917
 Heart 489
 Thermoregulation 583

Velocity
 Locomotion 597
 Migration 641
 Sound propagation 444
 Speed 780

Ventral grooves 673
 RT Feeding 404
 Lunge feeding 406
 Mouth 660
 Throat 249

Vernacular names 329
 RT Field identification guide 409
 Taxonomy 287
 Scientific nomenclature 685

Vertebral formula 740
 RT Baleen count 707
 Dental formula 747
 Osteology 717
 Phalangeal formula 543

Vestigial organs 210
 RT Evolution 385
 Paleontology 733

Vibrissae 631
 RT Hair 471.
 Touch 800

Video 265
 -- see instrument, various subjects.

Viscera 215
 -- see organs, miscellaneous.
 RT Glands 775

Vision
 Eye 880
 In air vision 523
 Underwater vision 445
 Visual communication 237
 Visual physiology 825

Visual communication 237
 RT Eye 880
 In air vision 523
 Underwater vision 445

Visual physiology 825
 NT Eye 880
 In air vision 523
 Underwater vision 445

CETACEA Database SUBJECT HEADINGS

Vocal learning 548
 BT Learning 582
 RT Imitation 517
 Phonation 761
 Social learning 956
 Training 915

Vocalization
 Acoustic communication 900
 Phonation 761, various subjects
 Sound production 997

Voice 377
 -- distinctive (in air) sounds from innate vocal mechanism.
 RT Coda 225
 Individual identification 529
 Phonation 761
 Signature signal 953

Water depth
 Dive depth 281
 Diving 321
 Oceanographic features 697
 Sound propagation 444

Water temperature 539
 BT Oceanographic features 697
 RT Body temperature 159
 Thermoregulation 583
 Weather 611

Wave noise
 Ambient noise 805
 Hydrodynamic sound 507
 Masking 613
 Splashes 163
 Weather 611

Wave riding 160
 RT Hydrodynamic 505
 Locomotion 597
 Speed 780

Weaning 742
 RT Age and growth 314
 Juvenile 557
 Lactation 569
 Parental 617

Weather 611
 NT Rain 821
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| 137 | <u>Barnacles</u> |
| 139 | <u>Behavioral ecology</u> |
| 141 | <u>Biochemistry</u> |
| 145 | <u>Bioluminescence</u> |
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| 157 | <u>Blowhole</u> |
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| 325 | <u>Anatomy</u> |
| 327 | <u>Diving physiology</u> |
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| 333 | <u>Dominance hierarchy</u> |
| 335 | <u>Geologic noise</u> |
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| 345 | <u>Echolocation</u> |
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| 385 | <u>Evolution</u> |
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| 395 | <u>Whistle</u> |
| 397 | <u>Collector's troubles</u> |
| 400 | <u>Acoustic analysis techniques</u> |
| 401 | <u>Fats oils waxes</u> |
| 402 | <u>Coordinated feeding</u> |
| 404 | <u>Feeding</u> |
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| 413 | <u>Field marks</u> |
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| 424 | <u>Fluking</u> |
| 425 | <u>Fish as food</u> |
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| 432 | <u>Whaling techniques</u> |
| 433 | <u>Plankton as food</u> |
| 437 | <u>Squid as food</u> |
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| 445 | <u>Underwater vision</u> |
| 449 | <u>Recruitment</u> |
| 450 | <u>Age estimation ear plug</u> |
| 451 | <u>Field observations</u> |
| 452 | <u>Genetics</u> |
| 453 | <u>Genitalia</u> |
| 455 | <u>Geographic distribution</u> |
| 457 | <u>Gestation</u> |
| 461 | <u>Grooming</u> |
| 464 | <u>Spermaceti</u> |
| 465 | <u>Growth rate</u> |
| 469 | <u>Taste</u> |
| 471 | <u>Hair</u> |
| 473 | <u>Harmonic</u> |
| 477 | <u>Harpoon</u> |
| 481 | <u>Haul-out</u> |
| 485 | <u>Healing</u> |
| 486 | <u>Stomach contents</u> |
| 487 | <u>Hearing</u> |
| 489 | <u>Heart</u> |
| 490 | <u>Age estimation tag returns</u> |
| 493 | <u>Home range</u> |
| 497 | <u>Hormone</u> |
| 500 | <u>Acoustic census</u> |
| 501 | <u>Hybrid</u> |
| 505 | <u>Hydrodynamic</u> |
| 507 | <u>Hydrodynamic sound</u> |
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| 513 | <u>Ice</u> |
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| 709 | <u>Orientation</u> |
| 713 | <u>Osmoregulation</u> |
| 715 | <u>Group size</u> |
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| 719 | <u>Competition with fisheries</u> |
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| 735 | <u>Dolphin fishery</u> |
| 738 | <u>Museum collections</u> |
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| 742 | <u>Weaning</u> |
| 745 | <u>Birth</u> |
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| 749 | <u>Pathology</u> |
| 750 | <u>Allometry</u> |
| 753 | <u>Tagging</u> |
| 755 | <u>Teeth</u> |
| 757 | <u>Biography</u> |
| 761 | <u>Phonation</u> |
| 763 | <u>Military effects</u> |
| 765 | <u>Photography techniques</u> |
| 770 | <u>Altruism</u> |
| 772 | <u>Liver</u> |
| 775 | <u>Glands</u> |
| 777 | <u>Pinger</u> |
| 780 | <u>Speed</u> |
| 781 | <u>Playback</u> |
| 785 | <u>Population models</u> |
| 793 | <u>Predation</u> |
| 794 | <u>Whaling quotas</u> |
| 800 | <u>Touch</u> |
| 801 | <u>Predator defense</u> |
| 805 | <u>Sound projector</u> |
| 810 | <u>Ambergris</u> |
| 811 | <u>Teratology</u> |
| 815 | <u>Protectionism</u> |
| 817 | <u>Underwater blow</u> |
| 819 | <u>Weight in water</u> |
| 821 | <u>Rain</u> |
| 825 | <u>Visual physiology</u> |
| 828 | <u>Telemetry</u> |
| 829 | <u>Recording system</u> |
| 831 | <u>Medical care.</u> |

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Marine Mammal References**

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| 500 | <u>Acoustic census</u> |
| 900 | <u>Acoustic communication</u> |
| 130 | <u>Acoustic lens</u> |
| 170 | <u>Acoustic location</u> |
| 250 | <u>Aerial behavior</u> |
| 314 | <u>Age and growth</u> |
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| 390 | <u>Age estimation bone</u> |
| 410 | <u>Age estimation corpora lutea</u> |
| 450 | <u>Age estimation ear plug</u> |
| 490 | <u>Age estimation tag returns</u> |
| 530 | <u>Age estimation teeth</u> |
| 570 | <u>Agonistic behavior</u> |
| 730 | <u>Albinism</u> |
| 750 | <u>Allometry</u> |
| 770 | <u>Altruism</u> |
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| 850 | <u>Ambient noise</u> |
| 890 | <u>Amplifier</u> |
| 325 | <u>Anatomy</u> |
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| 101 | <u>Asymmetry</u> |
| 109 | <u>Audiogram</u> |
| 121 | <u>Auditory physiology</u> |
| 129 | <u>Baleen</u> |
| 707 | <u>Baleen count</u> |
| 137 | <u>Barnacles</u> |
| 312 | <u>Behavior</u> |
| 139 | <u>Behavioral ecology</u> |
| 423 | <u>Benthos as food</u> |
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| 605 | <u>Bird marine mammal</u> |
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| 161 | <u>Blubber</u> |
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| 173 | <u>Brain</u> |
| 177 | <u>Breaching</u> |
| 181 | <u>Bubble feeding</u> |
| 174 | <u>Call</u> |
| 165 | <u>Callosities</u> |
| 677 | <u>Captive release</u> |
| 193 | <u>Captivity</u> |
| 197 | <u>Capture techniques</u> |
| 201 | <u>Care giving</u> |
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| 171 | <u>Cetacean general</u> |

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| 719 | <u>Competition with fisheries</u> |
| 245 | <u>Contaminants</u> |
| 247 | <u>Cooperation</u> |
| 402 | <u>Coordinated feeding</u> |
| 261 | <u>Critical bandwidth</u> |
| 269 | <u>Cyamids</u> |
| 747 | <u>Dental formula</u> |
| 285 | <u>Dermal hardening</u> |
| 935 | <u>Diagnosis taxonomic</u> |
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| 301 | <u>Digestive system</u> |
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| 371 | <u>Entrapment</u> |
| 375 | <u>Equipment special</u> |
| 381 | <u>Evoked potentials</u> |
| 385 | <u>Evolution</u> |
| 389 | <u>Excretion</u> |
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| 880 | <u>Eye</u> |
| 401 | <u>Fats oils waxes</u> |
| 404 | <u>Feeding</u> |
| 409 | <u>Field identification guide</u> |
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| 451 | <u>Field observations</u> |
| 337 | <u>Fin (and dorsal carina)</u> |
| 425 | <u>Fish as food</u> |
| 415 | <u>Fish hearing</u> |
| 941 | <u>Fish marine mammal</u> |
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| 715 | <u>Group size</u> |
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| 16. Abstract (Limit: 200 words) This documentation for the CETACEA database of marine mammal literature references updates and expands the original work by Watkins, Bird, Moore, and Tyack 1988 (Reference Database Marine Mammal Literature, Technical Report WHOI-88-2). The CETACEA database is a comprehensive index of literature references used to file, store, search, retrieve, and format the data on marine animals. Organization of the references is complementary to features developed by William E. Schevill for his library of older cetacean literature, having direct association of species with over 300 indexed subjects, and with observation dates, locations, etc. This documentation describes the operation of the database (3600 records), including indexing, sorting, and retrieval information developed through continued use of these systems. SPECIES and SUBJECT HEADING lists with their codes have been updated. Other databases have also developed around these indexing and sorting strategies to complement the CETACEA database, including databases of animal sounds for both the recording data and the acoustic spectral information stored in libraries of digital sound cuts. | | | |
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