

Readme notes – Historical Catch Return Database

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General Description

This database consists of a collection of historical commercial catch return datasets that were transcribed (digitised manually) from printed books and scanned copies of catch-return data sheets. Many of the latter were hand-written.

'Harbour returns' are monthly summaries (numbers) of the commercial fish species landed at harbours from Lamberts Bay to East London, as provided in the Department of Agriculture 'Report of the Marine Biologist' (1897-1900) and 'Report of the Government Biologist' (1900-1906) publications. The table called 'Boat registration data' contains information on the numbers and types of vessels and gear used at various harbours around South Africa between 1897 and 1906. These data were digitized from the same publications as the harbour returns and provide some insight into what gear was used to yield those harbour returns.

'Linefish returns' are daily catch returns (numbers but with weekly totals in weight) for commercial line fish species at harbours ranging from Lamberts Bay to Jeffreys Bay and covering the period 1922-1935. These data were captured from catch return sheets that are lodged at the Western Cape Archives in Roeland street in Cape Town.

'Trawl returns' are monthly catches (by weight) from trawlers at South African Harbours (Port Nolloth to Durban) between 1921 and 1960. They were digitized from catch return sheets that are also in the Western Cape Archives.

Most tables in the database have a 'RecentComment' column in which any notes pertaining to the record are included. An attempt has been made to make comments in these columns of limitations or peculiarities of the records in question. Users are advised to consult any entries in this column before performing analyses. These recently added comments are not to be confused with historical comments made in the original reports or sheets, which are included in columns headed 'Remarks'.

Authors who intend to use these data are strongly encouraged to consult the series of historical reports and the catch return sheets from which these data have been digitized. Digital scans of these reports and sheets are provided at

http://data.saeon.ac.za/communities/community_egagasini/content/products/hmdb/scans/images/

The two datasets which were digitized from original catch return sheets (Linefish Returns and Trawler Returns) contain a column titled 'Image' in the appropriate tables. The numbers in this

column indicate the number relating to the scanned image of the original sheet from which the data were captured (scanned images are numbered IMG0001.JPG, IMG0002.JPG...etc.). Please note, there is some overlap of image numbers for some linefish records (and between different catch return datasets, e.g. trawler returns and linefish returns), so image numbers are NOT necessarily unique identifiers of historical sheets.

Citation

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Errors

Users of the data should be aware that transcription errors would have been introduced during this digitization process. Great effort has been spent to verify data and improve the quality of records, however errors will have escaped attention. Any errors or peculiarities of the data (not listed in this document) should be reported to gilchrist@saeon.ac.za, using **Form B** that is provided together with this readme file at

http://data.saeon.ac.za/communities/community_egagasini/content/products/hmdb/documentation/

If users make substantial improvements to the quality of any part of these databases, they are asked to report these to gilchrist@saeon.ac.za and make their improved copies available for inclusion in subsequent release versions.

Taxonomy

An attempt was made to assign the correct (updated) taxonomy to the historical names. There is frequently some ambiguity, e.g. a common name could include multiple species, even though the capture method/location/previous records (with greater detail) may narrow this selection down. Examples of these would include records of 'Steenbras', 'Stumpnose', 'Kabeljaauw'. The rule followed was to use the lowest phylogenetic group that could confidently be assigned. In some cases one might suspect that it was likely a lower taxonomic group or species, however, if not certain, the higher taxonomic assignment was retained (and the suspected lower taxonomy may be stated in the RecentComment column). The taxonomic identities of samples can no doubt be improved over time. If users come across evidence to change the identity of records or are aware of updated names of listed taxons, they should report these changes to gilchrist@saeon.ac.za, using **Form B** provided. The list of references consulted during the updating of records included:

Afdeling Vissery en Biologiese Marine-Opname. 1935. Die Suid-Afrikaanse Seevisse van belang vir die Handel end die Vangs. Vissery Bulletin No. 2. Staatsdrukker, Pretoria.

Gilchrist, JDF. 1898. History of the local names of Cape fish. Transactions of the South African Philosophical Society 9: 207-213.

Smith JLB. 2003. *Smiths' Sea Fishes*. Cape Town: Struik Publishers.

Thompson WW. 1913. The Sea Fisheries of the Cape Colony: From van Riebeeck's Days to the Eve of the Union. T Maskew Miller. Cape Town.

World Register of Marine Species (WoRMS). (<http://www.marinespecies.org/>)

There seems to be lack of consistency in identification/differentiation of red and white stumpnose in the trawl returns from East London. As a result the differentiation of these two species likely cannot be trusted at this location, though perhaps with some effort and investigation one might be able to resolve this. CA noted that it is near the edge of the modern white stumpnose distribution and based on this, one might expect the majority of the catches to have been red stumpnose.

The majority of 'squid' records are likely to be *Loligo vulgaris*, however because some of the records could be different species, they have been classified as Decapodiformes.

'Knorhaan' has historically been applied to both spotted grunter and gurnards, potentially causing some ambiguity. If caught in offshore trawls, it would most often be gurnard, whereas if caught in Knysna lagoon (and near/in other estuaries), it would likely be spotted grunter. How often it was encountered in the commercial return records has not been verified, but during digitization 'Knorhaan' records were entered as one of these two taxa, therefore it is worth noting that there could be some mistakes in the assignment of these.

There is some ambiguity in the identity of 'harders' records and if their correct identification is of importance, then the following guidelines are suggested: The vast majority of the catches will likely be *Liza richardsonii*, however, some of the catches could be other species in the family Mugilidae, especially if the unit weight of the fish is relatively large (e.g. > 1 lbs per fish, which is estimated weight of a 30cm individual).

'Redfish' are understood to include multiple Sparidae species, typically panga, roman, red stumpnose and carpenter.

'Kabeljaauw' could include multiple species, however the great majority of trawl-caught would be *Argyrosomus inodorus*.

'Stocker' was applied to a group of non-targeted fish of limited value, described in the 1947 report as including 'Panga, Gurnard etc.'.

'Doppies' are catches of small *Argyrozona argyrozona*. As a result some sheets have two entries for this species (i.e. both 'Doppies' and 'Silverfish' were recorded on one sheet).

The identification of 'Hardekop' records is not known and was left as 'unknown' (which is how it was digitized from linefish return sheets).

During digitization of linefish returns, there were frequently records of 'Maasbankers + Bokkoms' that were entered as only 'Maasbankers', with the hand-written '+ Bokkoms' part being omitted. Therefore records of maasbanker should be treated with caution and may have frequently included harders and elf.

Coordinates/Location Information

Harbour/station names have been standardized, e.g. 'Hoetjies Bay' was included in 'Hoetjies and North Bays'; 'Hermanuspetrusfontein' included in 'Hermanus'.

Dataset-specific Notes

Harbour Returns

The data do not differentiate between gear type used and likely included landings from beach-seine, gill and set nets, trawl nets, linefishing and invertebrate harvesting. The catches seem to stem from estuaries, surf zones, reefs and offshore areas.

Boat Registration Data

The information in certain columns was only included/introduced in the historical reports during certain years. When there were no data recorded (i.e. these columns were not present in the historical report), the cells were left empty.

Trawler Returns

The description of trawler names was not comprehensively dealt with during digitization, especially when the data were collected from multiple trawlers and their names were hand-written on the bottom of the sheet (these names were usually not digitized). Anyone interested in linking the records to specific trawlers (or the numbers of trawlers) is advised to revisit the original sheets. If such data are digitized by users, please contact gilchrist@saeon.ac.za and be willing to provide a copy of the newly-digitized material.

In general, the sizes of fish (small/medium/large differentiated on sheets for certain species) do not appear to be reliably recorded and in addition, these size differentiations were not carefully

transferred during digitization. Therefore these size data should be used with extreme caution. There do seem to be some sequences of records (from certain periods and places), where the person recording the data appeared to make a valid attempt at differentiating and consistently recording the size classes. Those interested in sizes may want to consult the original sheets of the following data (note this is not a complete list - there are likely many further places/periods with potentially useful size data!):

-East London (Irvin+Johnson) 1958: Stockfish; Kob;

-Mosselbay (Irvin+Johnson) 1959, 1960: stockfish, kob, sole vs slips

The 'Company' column was added retrospectively as during digitization the company name was sometimes entered in the 'Station' or 'Trawler' columns. As this information might be useful for some applications, we have retained it in the company column instead of discarding it. However, as there was not a concerted effort to digitize this information, it is incomplete, and users interested in this information should consult original sheets.

A peculiarity was discovered in the trawler returns from Cape Town in 1927: frequently a shorthand was used instead of '00' on the end of a number (mainly in the case of Panga, e.g. IMG 9161; 9162). In some cases the shorthand was even omitted, but it is obvious from the price to weight ratio (relative to other contemporary records) that the written weight should be multiplied by 100. These records have been identified as far as possible and corrected in the database. If any other such peculiarities are discovered by users, please report these to gilchrist@saeon.ac.za.

Linefish Returns

Users should be aware that the data may contain instances of fish being recorded twice (by different entities) and thus need to be extremely cautious to avoid double-counting. Examining data that were recorded on different sheets, yet at the same location and during the same period, should help identify such problems. At Mosselbay for example, landings data seem to have been recorded by the harbour master, and then again by the South African Cold Storage Company during certain periods.

Not all 'linefish returns' were purely 'line-caught', as illustrated by some large (in number) catches of small fish, which must have been made by nets. These catches were likely partly made using beach-seine nets and gill or set nets.

The original linefish forms were set up to provide weekly records, ending on the Saturday (which is the record date). However in some (generally smaller) harbours and/or certain periods at some

harbours, they were filled in on a monthly basis, or over inconsistent periods of between one and four weeks (e.g. Stillbay records). An attempt has been made to separate those which are truly weekly data (the Saturday end-of-week date is recorded) into the column headed 'DuringWeekEnd_saturday', while those records collated over a period different to one week are detailed in the 'Period' column. If the records stem from multiple weeks (as opposed to a month), the dates of the Saturdays (end-of-week) are listed in this 'Period' column. e.g. 6, 13, 20 April 2013 would signify a three-week period, starting on Monday 1 April 2013.

Frequently (especially in the smaller towns/harbours) linefish return sheets were recorded with no or 'nill' catch. These records were not digitized, which causes some apparent gaps in the sequence of records as there are weeks (or return dates) with no entry. However there are also certain 'real' gaps in the original sheets - seemingly missing sheets - where one is not able to discern whether sheets went missing, were never filled, or whether no fishing (or only unsuccessful fishing) took place during those periods.

During verification of data it was discovered that a sequence of sheets (scans IMG9157-9163) were monthly summaries of the existing weekly data from Arniston (January 1925 – August 1926). To avoid double-counting or duplication of data, the monthly summaries were removed from the database. In case they may be useful, users are made aware of their existence.