FISH 6002 Major Assignment

Rylan J. Command

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Background

This is the project folder associated with the FISH 6002 Major Assignment.

This folder contains all of the data, scripts, and resources required to complete this assignment.
It also contains all of the figures and tables produced by the `.r` scripts.

The dataset used for this project is the "Task II catch data raised to total landings (5x5 degree squares, quarter, gear)" dataset obtained from the International Committee for the Conservation of Atlantic Tunas (ICCAT) database website (https://www.iccat.int/en/accesingdb.html) under "Sample fishing statistics and fish sizes", and is public domain. This dataset provides an estimation of Task I nominal catch (TINC) for the 9 major tuna and tuna-like species managed by the ICCAT, and is regularly collected as part of ongoing management of tuna and tuna-like fish stocks in the Atlantic Ocean and Mediterranean Sea. It covers the time period from 1950 - 2016 and the geographical range is the Atlantic Ocean and the Mediterranean Sea. The dataset contains 556155 observations (rows) of 15 variables (columns).

Metadata for this dataset can be found below, and additional material can be found in the `resources/` folder.

Project folder structure

Rylan_Command_FISH_6002_major_assignment
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| - `FISH_6002_major_assignment.Rproj` - The R project file
|
| - `README.md` - If you're veiwing this project on GitHub, you're reading it! This file is a description of the
| project and file structure, and contains all of the metadata for the FISH 6002 Major Assignment
| (and was used to generate the `README.pdf` file)
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| - `README.pdf` - You're reading it! (the `.pdf` version) This file is a description of the project and file
| structure, and contains all of the metadata for FISH 6002 Major Assignment
|
| - `data/` - Folder where raw data files can be found; these are not edited once created
| + - `cdis5016-all9sp.csv` - Dataset containing catch (t) retrieved from ICCAT website (see below)
|
| - `outputs/` - Folder where data (e.g. clean data) generated from scripts can be found
| (`0.0 Load data and clean.R` MUST BE RUN FIRST TO GENERATE)
| + - `catch_swo_longformat.csv` - Long format dataset generated for part 2 of Major Assignment
| + - `catch_swo_wideformat.csv` - Wide format dataset generated for part 2 of Major Assignment
|
| - `scr/` - Folder where all scripts to load, clean, analyze, etc. data can be found
| + - `0.0 Load data and clean.R` - Script to load data and clean data; contains code to complete part 2
| of the FISH 6002 Major Assignment
|
| - `figs/` - Folder where figures generated from scripts will be saved
|
| - `tables/` - Folder where tables generated from scripts will be saved

`| -` **`resources/`** - Any resources related to interpretation of data will be saved here
`| + -` **`ICCAT_codes.xlsx`** - Metadata pertaining to species codes, fleet codes, country codes, etc.
`| + -` **`Readme_catdis.pdf`** - Metadata pertaining to variables in the dataset (some outlined below)

Metadata for `cdis5016-all9sp.csv` file

This file contains catch (in tons) for the nine major tuna and tuna-like species of ICCAT (International Commission for the Conservation of Atlantic Tunas, https://www.iccat.int/en/accesingdb.html#).

The following table lists the variable/column names:

Field	Type	Description	Auxillary table*
SpeciesCode	string	ICCAT species code	Species
YearC	integer	Calendar Year	
Decade	integer	Decade (natural; e.g. 2000 to 2009)	
FlagName	string	ICCAT Flag Name	Flags
FleetCode	string	ICCAT Fleet code	Fleets
Stock	string	Species related stock or management unit	
GearGrp	string	Gear group	
SchoolType	string	Type of fishing operation (PS only)	School types
Trimester	string	Time strata (trimester 1, 2, 3, 4)	
QuadID	string	ICCAT quadrant ICCAT	Quadrants
Lat5	integer	Latitude of a 5x5 square	
Lon5	integer	Longitude of a 5x5 square	
yLat5ctoid	float	Latitude (decimal degrees) centroid (Cartesian) of a 5x5 square	
xLon5ctoid	float	Longitude (decimal degrees) centroid (Cartesian) of a 5x5 square	
Catch_t	float	Nominal catches (tones)	

*Auxillary table information can be found in `ICCAT_codes.xlsx` in the `resources/` subfolder

Species codes

The species codes for each of the major tuna species included in the `cdis5016-all9sp.csv` file. Species codes can also be found in `ICCAT_codes.xlsx` in the `resources/` subfolder.

SpeciesID	SpeciesCode	ScieName	NameUK	NameFR	NameSP
1	BFT	Thunnus thynnus	Northern bluefin tuna	Thon rouge du Nord	Atún rojo del norte
3	YFT	Thunnus albacares	Yellowfin tuna	Albacore	Rabil
4	ALB	Thunnus alalunga	Albacore	Germon	Atún blanco

SpeciesID	SpeciesCode	ScieName	NameUK	NameFR	NameSP
5	BET	Thunnus obesus	Bigeye tuna	Thon obèse(=Patudo)	Patudo
8	SKJ	Katsuwonus pelamis	Skipjack tuna	Listao	Listado
15	SAI	Istiophorus albicans	Atlantic sailfish	Voilier de l'Atlantique	Pez vela del Atlántico
17	BUM	Makaira nigricans	Atlantic blue marlin	Makaire bleu de l'Atlantique	Aguja azul del Atlántico
18	WHM	Tetrapturus albidus	Atlantic white marlin	Makaire blanc de l'Atlantique	Aguja blanca del Atlántico
19	SWO	Xiphias gladius	Swordfish	Espadon	Pez espada

Stocks

The stocks or managment units for each species. An "X" indicates that a species is present in a given management unit.

Stock	ALB	BET	BFT	BUM	SAI	SKJ	SWO	WHM	YFT
AT (all Atlantic)		X		X				X	
ATE (Atlantic east)			X		X	X			X
ATN (Atlantic north)	X						X		
ATS (Atlantic south)	X						X		
ATW (Atlantic west)			X		X	X			X
MED (Mediterranean)	X	X	X	X	X	X	X	X	X

Gear groups

The primary gear groups used to capture each species, defined based on its weight in overall catches by decade. An "X" indicates a species is regularly captured with a given gear group.

Gear group	ALB	BET	BFT	BUM	SAI	SKJ	SWO	WHM	YFT
BB (bait boat)	X	X	X	X	X	X	X	X	X
GN (gillnet)	X			X	X		X	X	
HL (handline)			X		X				
HP (harpoon)							X		
LL (longline)	X	X	X	X	X	X	X	X	X
PS (purse seine)	X	X	X	X	X	X	X	X	X
RR (rod & reel)			X	X	X			X	
TP (trap)			X						
TR (troll)	X		X		X			X	
TW (trawl)	X								
oth (others)	X	X	X	X	X	X	X	X	X