This \_readme\_metadata\_foodcorrection file was generated on 2021/05/17

-------------------

GENERAL INFORMATION

-------------------

Title of Code: Escapement generator\_PNAS correction.R

Title of Output Dataset: MegaData\_Ray.rds

--------------------

DATA DESCRIPTION & FILE OVERVIEW

--------------------

Description: Code for generating MagaData\_Ray.rds

--------------------------

METHODOLOGICAL INFORMATION

--------------------------

Description of methods used for collection/generation of data:

***F*/*F*msy (parameter FvFmsy\_Ray)**

Using the original MegaData.rds from Cabral et al. (2020), we update the Escapement/Exploitation Rate values of RAM stocks using the following processes: 1) we use *F*/*F*MSY from RAM version 4.491 (210 stocks), 2) where individual values of *F* and *F*MSY exist in RAM version 4.491, we combine those to generate *F*/*F*MSY (1 additional stock), 3) use Costello *et al.* *F*/*F*MSY estimate for RAM stocks to fill the gap (129 additional stocks). Of the 527 assessed RAM stocks that were originally used in Cabral et al.(2020), 187 do not have *F*/*F*MSY values. We dropped the 187 stocks in this analysis.

Escapement is generated using:

Efin\_BAU1\_Ray= 1-(r\_fin\*FvFmsy\_Ray/2)

Exploitation rate is generated using:

ExploitationRate\_BAU1\_Ray = 1-Efin\_BAU1\_Ray

--------------------------

DATA-SPECIFIC INFORMATION

--------------------------

Variable list, defining any abbreviations, units of measure, codes or symbols used:

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Values | Unit | Description |
| SpeciesID |  |  | This corresponds to the Aquamaps i.d. assigned to each species |
| Manage | 0 – Non-RAM stock  1 – RAM stock |  | Categorize stocks as RAM or non-RAM |
| stockid |  |  | Aquamaps i.d. was assigned to non-RAM stocks and RAM i.d. was assigned to RAM stocks |
| SciName |  |  | Stock’s scientific name |
| r\_fin |  |  | Population growth rate |
| m\_fin | 0.1 – low mobility  0.3 – moderate mobility  0.9 – high mobility |  | Species mobility |
| MSYfin |  | Metric ton | Maximum sustainable yield |
| Kfin |  | Metric ton | Carrying capacity |
| FvFmsy\_Ray |  |  | F/Fmsy values derived from RAM and Costello et al. (2016) |
| INCLUDE | 0 or 1 |  | INCLUDE = 1 means included in this updated analysis. The original list of stocks came from Cabral et al. (2020). RAM stocks with no RAM F/Fmsy data were removed from the updated analysis. |
| Efin\_BAU1\_Ray |  |  | Escapement or the proportion of surviving biomass. Exploitation rate is just 1-Escapement. Note that if the Exploitation rate is greater than the stock growth rate r (i.e. 1-Escapement > r), catch will be negative. To avoid negative catches, we capped the Exploitation rate to r if Exploitation rate is > r. In terms of Escapement, the formula is:  Escapement = 1-r if (1-Escapement)>r |
| ExploitationRate\_BAU1\_Ray |  |  | Exploitation rate. This is derived using the formula Exploitation rate = 1 - Escapement |