Create table of stressors

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Table of Contents

source('https://raw.githubusercontent.com/oharac/src/master/R/common.R')  
  
source(here::here('common\_fxns.R'))  
library(flextable)

# Summary

This script creates table S1, aligning IUCN threats with CHI stressors

# Methods

Gather processed sensitivity dataframe.

spp\_incl <- get\_incl\_spp()

## Match threat codes to stressors

threat\_to\_stressor <- read\_csv(here('\_raw/iucn\_threat\_to\_stressor\_lookup.csv')) %>%  
 mutate(code\_main = str\_extract(code, '[0-9]+') %>% as.numeric(),  
 code\_short = str\_extract(code, '[0-9]+\\.[0-9]+')) %>%  
 mutate(stressor = str\_split(stressor, ';')) %>%  
 unnest(stressor) %>%  
 separate(desc, into = c('desc\_main', 'desc\_sub', 'desc\_subsub'),   
 sep = ': ', remove = FALSE)

##   
## ── Column specification ────────────────────────────────────────────────────────  
## cols(  
## code = col\_character(),  
## desc = col\_character(),  
## stressor = col\_character(),  
## category = col\_character()  
## )

## Warning: Expected 3 pieces. Additional pieces discarded in 16 rows [45, 46, 47,  
## 48, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62].

## Warning: Expected 3 pieces. Missing pieces filled with `NA` in 62 rows [1, 2, 3,  
## 4, 5, 6, 11, 15, 20, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, ...].

thr\_to\_spp <- spp\_incl %>%  
 left\_join(threat\_to\_stressor, by = c('code', 'stressor', 'category')) %>%  
 mutate(desc\_main = sprintf('%s. %s', code\_main, desc\_main),  
 desc\_sub = sprintf('%s. %s', code\_short, desc\_sub)) %>%  
 select(code\_main, desc\_main, desc\_sub, stressor, iucn\_sid, category) %>%  
 filter(!is.na(stressor)) %>%  
 distinct()  
  
repeated\_strs <- c('Nutrient pollution', 'Direct human')  
  
threat\_table <- thr\_to\_spp %>%  
 left\_join(read\_csv(here('\_raw/stressor\_names.csv')), by = 'stressor') %>%  
 group\_by(code\_main, desc\_main, desc\_sub, str\_desc) %>%  
 summarize(n\_spp = n\_distinct(iucn\_sid)) %>%  
 ungroup() %>%  
 arrange(code\_main, str\_desc) %>%  
 select(-code\_main) %>%  
 mutate(str\_desc = ifelse(str\_desc %in% repeated\_strs, paste0(str\_desc, '\*'), str\_desc)) %>%  
 setNames(c('Threat category', 'Threat subcategory', 'Stressor', 'n spp'))

##   
## ── Column specification ────────────────────────────────────────────────────────  
## cols(  
## stressor = col\_character(),  
## str\_desc = col\_character()  
## )

## `summarise()` regrouping output by 'code\_main', 'desc\_main', 'desc\_sub' (override with `.groups` argument)

write\_csv(threat\_table, here('ms\_tables/s1\_table\_threat\_spp.csv'))  
  
flextable(threat\_table) %>%  
 theme\_vanilla() %>%  
 align(part = 'all', align = 'left') %>%  
 align(part = 'all', j = 4, align = 'center') %>%  
 # bg(bg = 'white', part = 'header') %>%  
 # border(border.bottom = officer::fp\_border(), part = 'header') %>%  
 font(font = 'Arial', part = 'all') %>%  
 fontsize(size = 8, part = 'all') %>%  
 width(1:2, width = 2.5) %>%  
 width(3, width = 1) %>%  
 merge\_v(j = 1:3)

| **Threat category** | **Threat subcategory** | **Stressor** | **n spp** |
| --- | --- | --- | --- |
| 1. Residential & commercial development | 1.1. Housing & urban areas | Human population | 501 |
| 1.2. Commercial & industrial areas | 468 |
| 1.3. Tourism & recreation areas | 451 |
| 2. Agriculture & aquaculture | 2.4. Marine & freshwater aquaculture | Nutrient pollution\* | 36 |
| 4. Transportation & service corridors | 4.3. Shipping lanes | Shipping | 438 |
| 5. Biological resource use | 5.4. Fishing & harvesting aquatic resources | Artisanal fishing | 747 |
| Demersal destructive fishing | 313 |
| Demersal non-destructive high bycatch fishing | 246 |
| Demersal non-destructive low bycatch fishing | 67 |
| Pelagic high bycatch fishing | 206 |
| Pelagic low bycatch fishing | 69 |
| 6. Human intrusions & disturbance | 6.1. Recreational activities | Human population | 460 |
| 6.3. Work & other activities | 20 |
| 9. Pollution | 9.6. Excess energy | Light pollution | 20 |
| 9.1. Domestic & urban waste water | Nutrient pollution\* | 19 |
| 9.3. Agricultural & forestry effluents | 9 |
| 9.1. Domestic & urban waste water | Organic chemical pollution | 7 |
| 9.2. Industrial & military effluents | 74 |
| 9.3. Agricultural & forestry effluents | 7 |
| 11. Climate change & severe weather | 11.1. Habitat shifting & alteration | Ocean acidification | 2 |
| 11.3. Temperature extremes | 406 |
| 11.5. Other impacts | 2 |
| 11.1. Habitat shifting & alteration | Sea level rise | 3 |
| 11.5. Other impacts | 1 |
| 11.1. Habitat shifting & alteration | Sea surface temperature extremes | 92 |
| 11.3. Temperature extremes | 472 |
| 11.5. Other impacts | 8 |