Visualizations

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2022-11-27

Visualizations

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
#imports
library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.2 --
## v ggplot2 3.4.0      v purrr   0.3.5
## v tibble  3.1.8      v dplyr   1.0.10
## v tidyr   1.2.1      v stringr 1.4.1
## v readr   2.1.3      v forcats 0.5.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(ggplot2)
library(scales)
```

```
##
## Attaching package: 'scales'
##
## The following object is masked from 'package:purrr':
##
##     discard
##
## The following object is masked from 'package:readr':
##
##     col_factor
```

```
library(readr)
V2_global_bleaching_and_environmental_data <- read_csv("V2-global-bleaching-and-environmental-data.csv")
```

```
## Warning: One or more parsing issues, call `problems()` on your data frame for details,
## e.g.:
##   dat <- vroom(...)
##   problems(dat)
```

```
## Rows: 41361 Columns: 62
## -- Column specification --------------------------------------------------------
## Delimiter: ","
```

```
## chr  (52): Data_Source, Ocean_Name, Reef_ID, Realm_Name, Ecoregion_Name, Cou...
## dbl   (9): Site_ID, Sample_ID, Latitude_Degrees, Longitude_Degrees, Turbidit...
## date  (1): Date
##
## i Use `spec()` to retrieve the full column specification for this data.
## i Specify the column types or set `show_col_types = FALSE` to quiet this message.
```

```
bleach <- V2_global_bleaching_and_environmental_data

#cleaning the graph
update_bleach <- bleach %>%
  filter(!(Percent_Bleaching=='nd')) %>%
  filter(!(Temperature_Mean=='nd')) %>%
  mutate_at('Percent_Bleaching', as.numeric) %>%
  mutate_at('Temperature_Mean', as.numeric) %>%
  mutate_at('Temperature_Kelvin', as.numeric) %>%
  mutate_at('Distance_to_Shore', as.numeric)
```

```
## Warning in mask$eval_all_mutate(quo): NAs introduced by coercion

## Warning in mask$eval_all_mutate(quo): NAs introduced by coercion
```

```
#Computations/Checking my Work
max(update_bleach$Temperature_Mean)
```

```
## [1] 303.52
```

```
min(update_bleach$Temperature_Mean)
```

```
## [1] 290.88
```

```
max(update_bleach$Percent_Bleaching)
```

```
## [1] 100
```

```
min(update_bleach$Percent_Bleaching)
```

```
## [1] 0
```

```
class(update_bleach$Temperature_Mean)
```

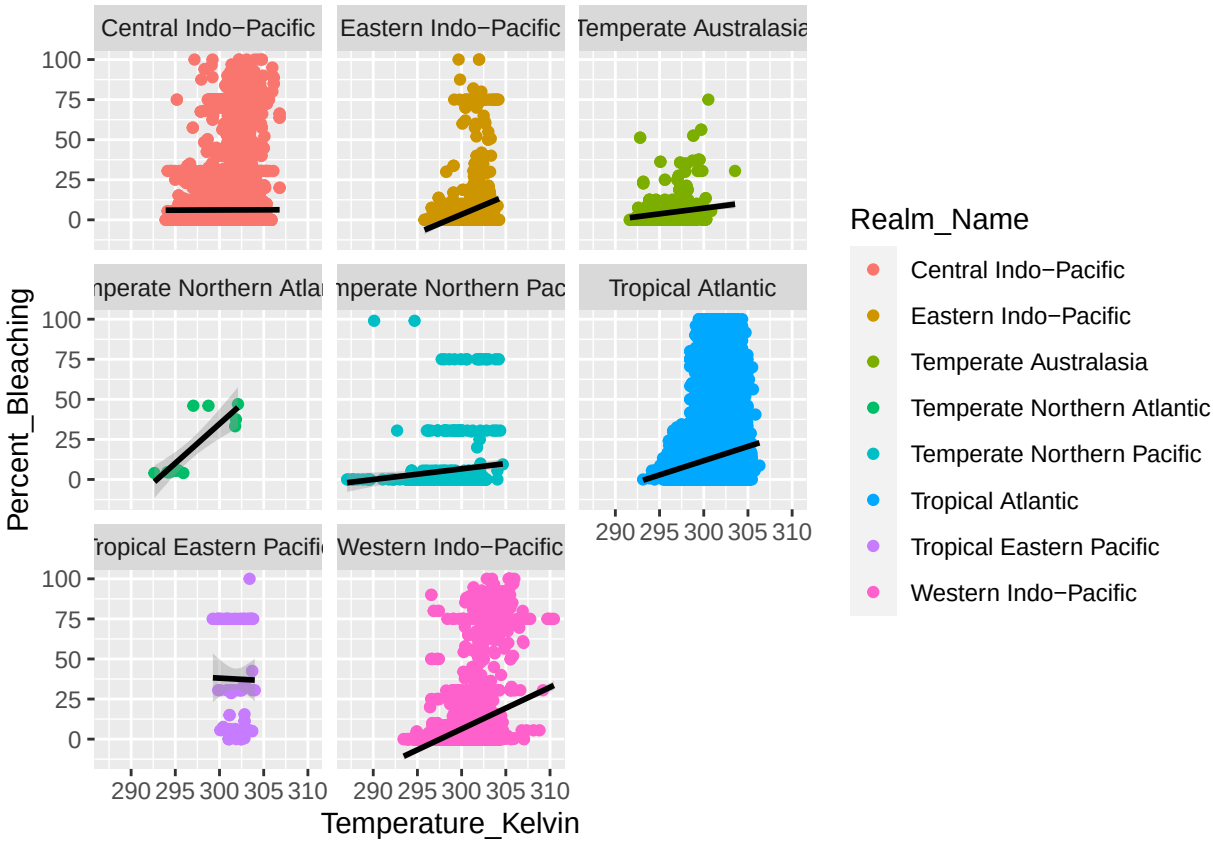
```
## [1] "numeric"
```

```
class(update_bleach$Percent_Bleaching)
```

```
## [1] "numeric"
```

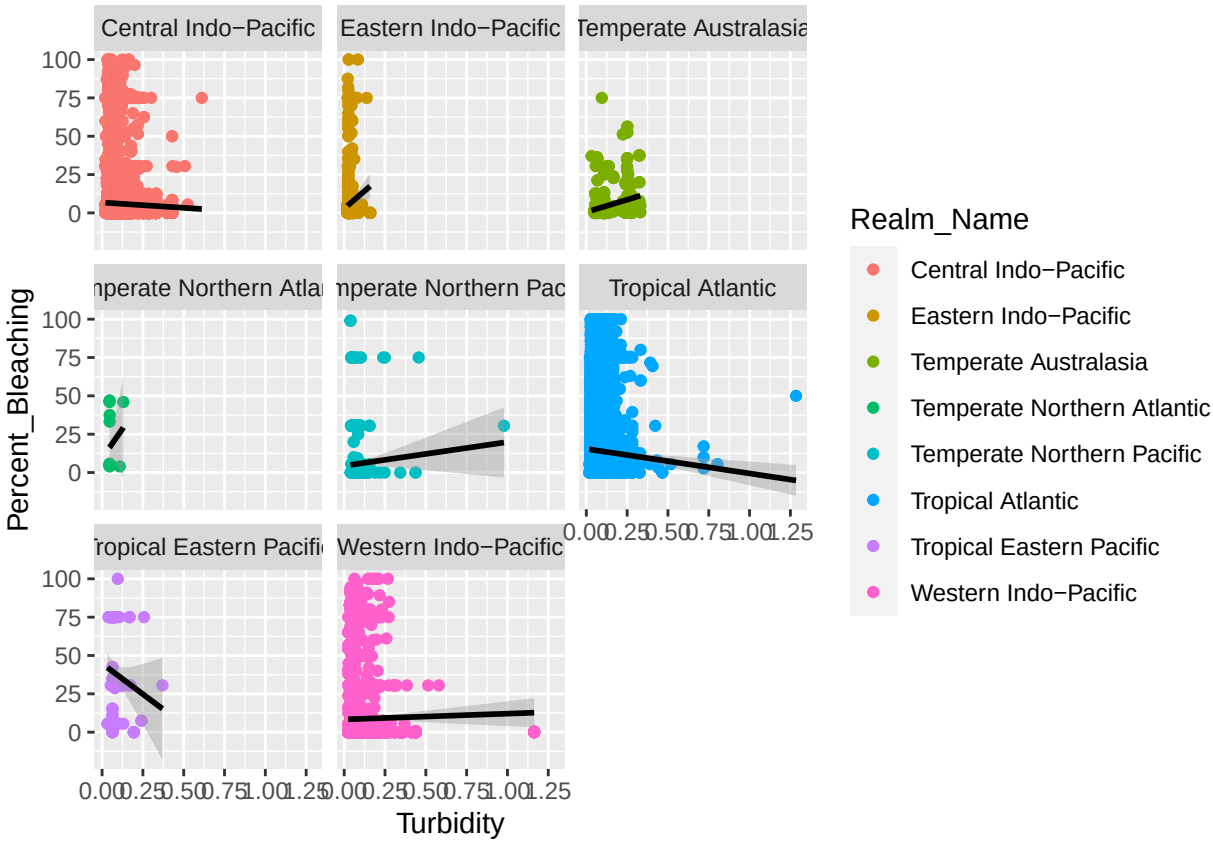
```
#Realm_Name Plot (1)
update_bleach %>%
  ggplot(aes(Temperature_Kelvin,Percent_Bleaching,color=Realm_Name)) +
  geom_point() +
  geom_smooth(method="lm",color="black") +
  scale_x_continuous(n.break=6) +
  facet_wrap(~Realm_Name)
```

```
## `geom_smooth()` using formula = 'y ~ x'

## Warning: Removed 16 rows containing non-finite values (`stat_smooth()`).

## Warning: Removed 16 rows containing missing values (`geom_point()`).
```



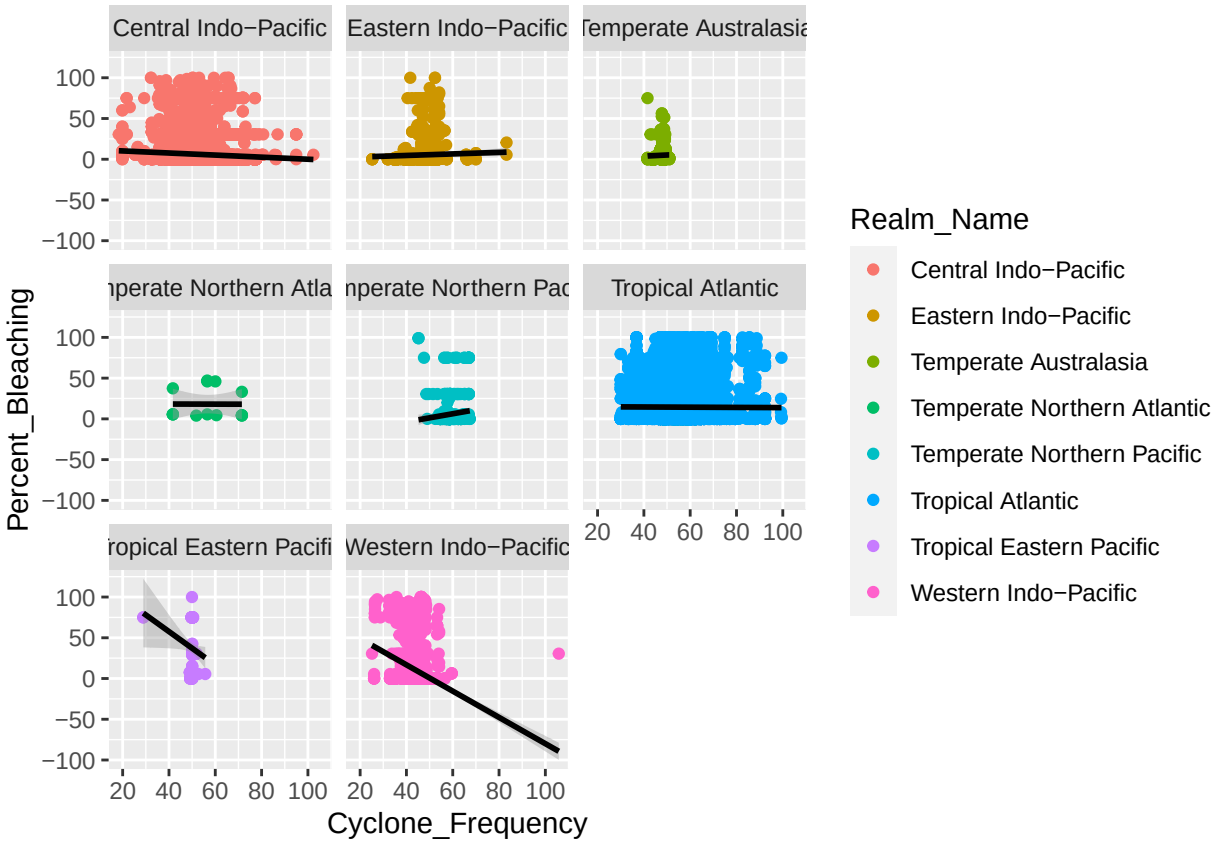

```
#Turbidity | Realm facet wrapped (2)
update_bleach %>%
  ggplot(aes(Turbidity,Percent_Bleaching,color=Realm_Name)) +
  geom_point() +
  geom_smooth(method="lm",color="black") +
  scale_x_continuous(n.break=6) +
  facet_wrap(~Realm_Name)
```

```
## `geom_smooth()` using formula = 'y ~ x'
```




```
#Cyclone Frequency | Realm Facet Wrapped (3)
update_bleach %>%
  ggplot(aes(Cyclone_Frequency,Percent_Bleaching,color=Realm_Name)) +
  geom_point() +
  geom_smooth(method="lm",color="black") +
  scale_x_continuous(n.break=6) +
  facet_wrap(~Realm_Name)
```

```
## `geom_smooth()` using formula = 'y ~ x'
```

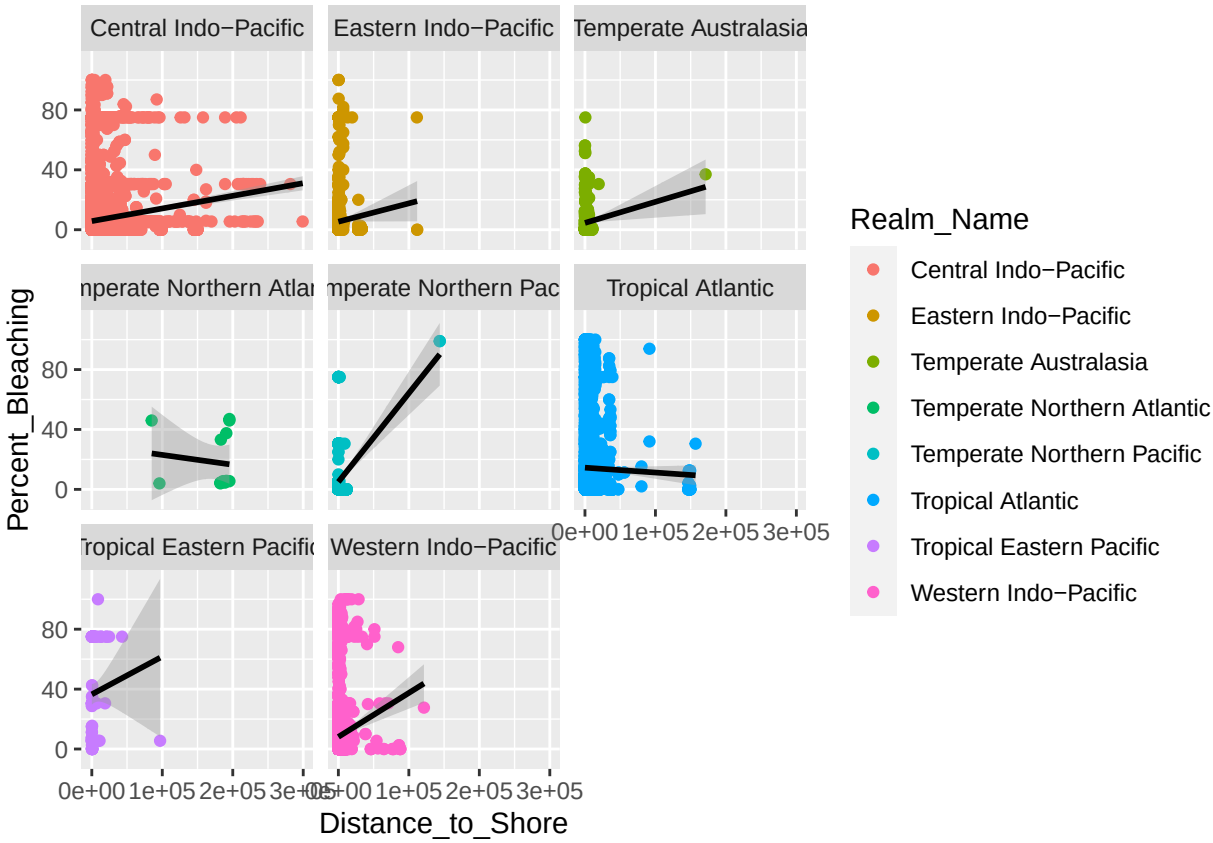



```
#Distance to Shore | Realm Facet Wrapped (4)
update_bleach %>%
  ggplot(aes(Distance_to_Shore,Percent_Bleaching,color=Realm_Name)) +
  geom_point() +
  geom_smooth(method="lm",color="black") +
  scale_x_continuous(n.break=3) +
  facet_wrap(~Realm_Name)
```

```
## `geom_smooth()` using formula = 'y ~ x'
```

```
## Warning: Removed 2 rows containing non-finite values (`stat_smooth()`).
```

```
## Warning: Removed 2 rows containing missing values (`geom_point()`).
```



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.