SIF analise

2024-01-24

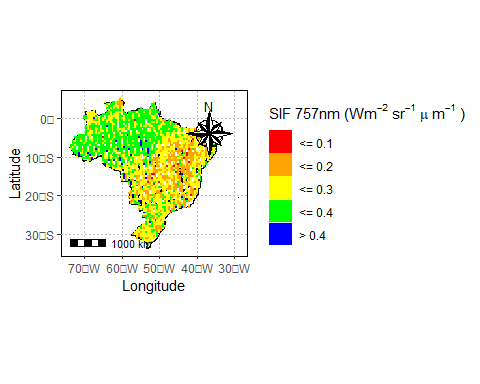
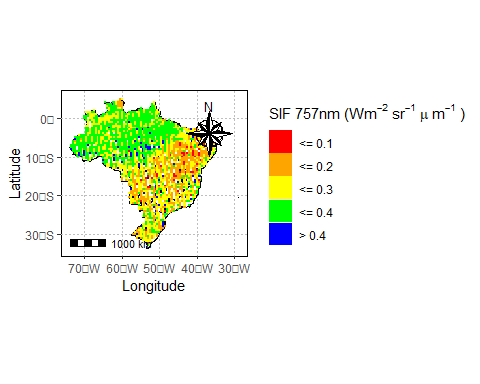
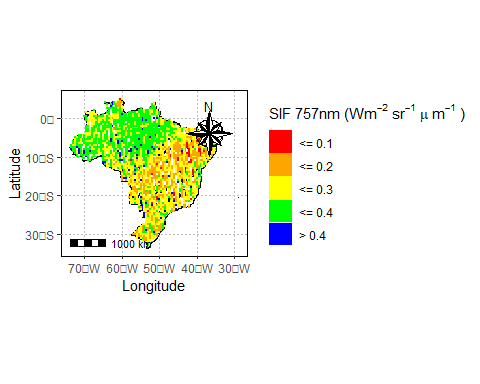
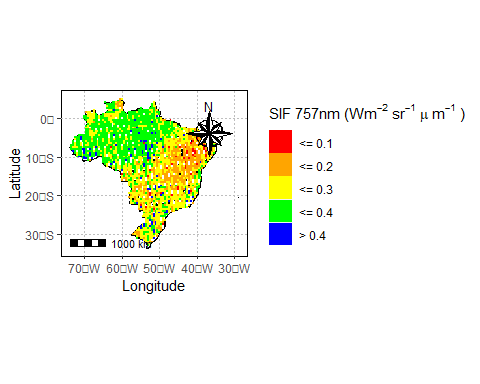
### Carregando bibliotecas

library(tidyverse)  
library(geobr)  
source("R/gafico.R")  
source("R/my-function.R")  
#> | | | 0% | |=== | 4% | |===== | 7% | |======== | 11% | |========== | 15% | |============= | 19% | |================ | 22% | |================== | 26% | |===================== | 30% | |======================= | 33% | |========================== | 37% | |============================= | 41% | |=============================== | 44% | |================================== | 48% | |==================================== | 52% | |======================================= | 56% | |========================================= | 59% | |============================================ | 63% | |=============================================== | 67% | |================================================= | 70% | |==================================================== | 74% | |====================================================== | 78% | |========================================================= | 81% | |============================================================ | 85% | |============================================================== | 89% | |================================================================= | 93% | |=================================================================== | 96% | |======================================================================| 100%  
#> Downloading: 2 kB Downloading: 2 kB Downloading: 18 kB Downloading: 18 kB Downloading: 34 kB Downloading: 34 kB Downloading: 51 kB Downloading: 51 kB Downloading: 67 kB Downloading: 67 kB Downloading: 83 kB Downloading: 83 kB Downloading: 99 kB Downloading: 99 kB Downloading: 120 kB Downloading: 120 kB Downloading: 120 kB Downloading: 120 kB Downloading: 140 kB Downloading: 140 kB Downloading: 140 kB Downloading: 140 kB Downloading: 150 kB Downloading: 150 kB Downloading: 160 kB Downloading: 160 kB Downloading: 170 kB Downloading: 170 kB Downloading: 170 kB Downloading: 170 kB Downloading: 180 kB Downloading: 180 kB Downloading: 180 kB Downloading: 180 kB Downloading: 200 kB Downloading: 200 kB Downloading: 200 kB Downloading: 200 kB Downloading: 210 kB Downloading: 210 kB Downloading: 210 kB Downloading: 210 kB Downloading: 230 kB Downloading: 230 kB Downloading: 230 kB Downloading: 230 kB Downloading: 240 kB Downloading: 240 kB Downloading: 240 kB Downloading: 240 kB Downloading: 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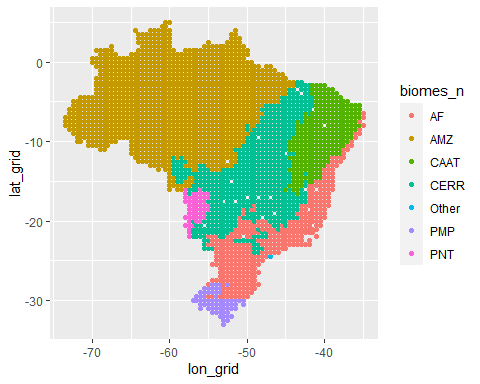
### Carregando dados

sif\_file <- list.files('SIF/data/',full.names = T)  
sif\_df <- read\_rds(sif\_file) |> filter(year>2018 & year <2023) |>   
 filter(sif\_757> -0.1)  
   
  
states <- read\_rds("data/states.rds") |>   
 mutate(name\_region = ifelse(name\_region == "Centro Oeste","Centro-Oeste",name\_region))

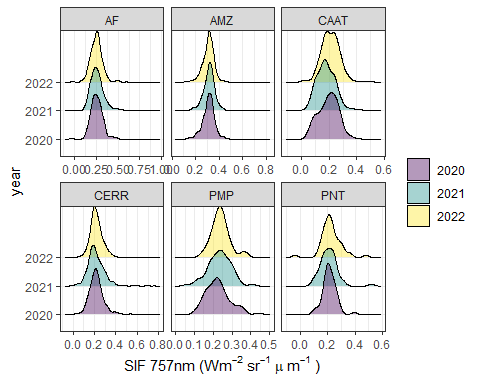
anos <- 2019:2022  
for(i in seq\_along(anos)){  
 plot\_sif <- biomes |>   
 filter(name\_biome!='Sistema Costeiro') |>   
 ggplot() +  
 geom\_sf(fill="white", color="black",  
 size=.15, show.legend = FALSE) +  
 geom\_tile(data= sif\_df |>   
 filter(dist\_sif<0.25) |>   
 filter(year==anos[i]) |>   
 #mutate(sif\_757=cut(sif\_757,5)) |>   
 group\_by(lon\_grid,lat\_grid) |>   
 summarise(  
 sif = mean(sif\_757)  
 ) |>   
 mutate(  
 sifn=case\_when(  
 sif <=.1 ~ '<= 0.1',  
 sif <=.2 ~ '<= 0.2',  
 sif <=.3 ~ '<= 0.3',  
 sif<= .4 ~ '<= 0.4',  
 sif >.4 ~ '> 0.4'  
 )  
 )  
 ,  
 aes(lon\_grid,lat\_grid,fill=sifn))+  
 scale\_fill\_manual(values=c('red','orange','yellow','green','blue'))+  
 tema\_mapa()+  
 labs(x='Longitude',y='Latitude',  
 fill=expression('SIF 757nm (Wm'^-2~'sr'^-1~mu~'m'^-1~')')  
 )  
 ggplot2::ggsave(paste0('img/sif\_media\_',anos[i],'.png'),  
 units="in", width=8, height=6,  
 dpi=1000)  
 print(plot\_sif)  
}



sif\_df |>   
 filter(dist\_sif<0.25) |>   
 group\_by(lon\_grid,lat\_grid,year) |>   
 summarise(sif = mean(sif\_757)) |>   
 mutate(  
 biomes = get\_geobr\_biomes(lon\_grid,lat\_grid)  
 ) |>  
 mutate(  
 biomes\_n =  
 case\_when(  
 biomes=='Other'& lon\_grid>=-45 & lat\_grid <0~'AF',  
 biomes=='Amazônia'~'AMZ',  
 biomes=='Other'& lon\_grid< -45 & lat\_grid >=-10 ~'AMZ',  
 biomes == 'Mata Atlântica' ~ 'AF',  
 biomes=='Cerrado'~'CERR',  
 biomes =='Pampa'~'PMP',  
 biomes == 'Pantanal' ~ 'PNT',  
 biomes=='Caatinga'~'CAAT',  
 .default = 'Other'  
 )  
 ) |>  
 ggplot(aes(x=lon\_grid,y=lat\_grid,col=biomes\_n))+  
 geom\_point()



sif\_df |>   
 filter(dist\_sif<0.25) |>   
 group\_by(lon\_grid,lat\_grid,year) |>   
 summarise(sif = mean(sif\_757)) |>   
 mutate(  
 biomes = get\_geobr\_biomes(lon\_grid,lat\_grid)  
 ) |>  
 mutate(  
 biomes\_n =  
 case\_when(  
 biomes=='Other'& lon\_grid>=-45 & lat\_grid <0~'AF',  
 biomes=='Amazônia'~'AMZ',  
 biomes=='Other'& lon\_grid< -45 & lat\_grid >=-10 ~'AMZ',  
 biomes == 'Mata Atlântica' ~ 'AF',  
 biomes=='Cerrado'~'CERR',  
 biomes =='Pampa'~'PMP',  
 biomes == 'Pantanal' ~ 'PNT',  
 biomes=='Caatinga'~'CAAT',  
 .default = 'Other'  
 )  
 ) |>  
 filter(biomes\_n!='Other',  
 year>2019) |>   
 ggplot(aes(x=sif,y=as.factor(year),fill=as.factor(year)))+  
 ggridges::geom\_density\_ridges(alpha=.4)+  
 facet\_wrap(~biomes\_n,scales='free\_x')+  
 labs(x=expression('SIF 757nm (Wm'^-2~'sr'^-1~mu~'m'^-1~')'),  
 y='year',  
 fill=''  
 )+  
 scale\_fill\_viridis\_d()+  
 theme\_bw()



ggplot2::ggsave('img/sif\_distribution.png',  
 units="in", width=8, height=6,  
 dpi=1000)