ggplots

library(tidyverse)

## -- Attaching packages --------------------------------------------------------------- tidyverse 1.2.1 --

## v ggplot2 3.0.0 v purrr 0.2.5  
## v tibble 1.4.2 v dplyr 0.7.6  
## v tidyr 0.8.2 v stringr 1.3.1  
## v readr 1.1.1 v forcats 0.3.0

## -- Conflicts ------------------------------------------------------------------ tidyverse\_conflicts() --  
## x dplyr::filter() masks stats::filter()  
## x dplyr::lag() masks stats::lag()

library(dplyr)  
library(DataCombine)

## Warning: package 'DataCombine' was built under R version 3.5.2

projectsumtable <- read\_csv("G:/data/tools/MaxEnt/Analysis/scr\_fogelev\_270m/summarytables/projectionssummarytable.csv")

## Parsed with column specification:  
## cols(  
## Projections = col\_character(),  
## `Avg Test AUC` = col\_double(),  
## `Highest Future Suitability` = col\_double(),  
## `Mean Change in Suitability` = col\_double(),  
## `Highest Gain` = col\_double(),  
## `Highest Loss` = col\_double(),  
## `Percent Suitable Area` = col\_double(),  
## `Overall Percent Change of Suitable Area` = col\_double()  
## )

historicsumtable <- read\_csv("G:/data/tools/MaxEnt/Analysis/scr\_fogelev\_270m/summarytables/historicsummarytable.csv")

## Parsed with column specification:  
## cols(  
## Projections = col\_character(),  
## `Avg Test AUC` = col\_double(),  
## `Highest Present Suitability` = col\_double(),  
## `Percent Suitable Area` = col\_double()  
## )

projections\_df <- projectsumtable %>%   
 separate(col = c("Projections"), " ", into = c("name","rcp","date"))  
  
unite <- data.frame(projections\_df$name, projections\_df$rcp)  
unite <- unite(data=unite, col="scenario", sep=" ")  
  
projections\_df <- projections\_df %>%   
 select(-name,-rcp)  
  
projections\_df$scenario <- unite$scenario  
  
projections\_df <- projections\_df[,c(9,1,2,3,4,5,6,7,8)]  
  
projection\_gg <- projections\_df %>%   
 select(scenario, date, "Percent Suitable Area")  
  
colnames(projection\_gg) <- c("scenario","date","p\_suitable")  
projection\_gg$scenario <- as.factor(projection\_gg$scenario)  
summary(projection\_gg)

## scenario date p\_suitable   
## CCSM4 8.5:3 Length:12 Min. :0.0000000   
## MIROC 4.5:3 Class :character 1st Qu.:0.0000000   
## MIROC 8.5:3 Mode :character Median :0.0008167   
## MPI 4.5 :3 Mean :0.0092290   
## 3rd Qu.:0.0025318   
## Max. :0.0516171

historic\_suit <- historicsumtable[1,4]  
  
mir45\_row <- c('MIROC 4.5',1,historic\_suit)  
mir85\_row <- c('MIROC 8.5',1,historic\_suit)  
mpi45\_row <- c('MPI 4.5',1,historic\_suit)  
ccsm85\_row <- c('CCSM4 8.5',1,historic\_suit)  
  
projection\_gg <- InsertRow(projection\_gg,mpi45\_row,RowNum=1)  
projection\_gg <- InsertRow(projection\_gg,ccsm85\_row,RowNum=5)  
projection\_gg <- InsertRow(projection\_gg,mir45\_row,RowNum=9)  
projection\_gg <- InsertRow(projection\_gg,mir85\_row,RowNum=13)  
  
date\_vector <- rep(seq(1:4),4)  
projection\_gg$date <- date\_vector  
  
  
levels(projection\_gg$scenario)

## [1] "CCSM4 8.5" "MIROC 4.5" "MIROC 8.5" "MPI 4.5"

projection\_gg$scenario <- factor(projection\_gg$scenario, levels = c("MIROC 8.5","MIROC 4.5","CCSM4 8.5","MPI 4.5"))  
  
ggplot(projection\_gg, aes(x=date,y =p\_suitable))+  
 geom\_line(aes(color=scenario),size=1)+  
 ylab("Proportion of island with suitable habitat")+  
 xlab("Time Period")+  
 scale\_x\_discrete(limits = c("1981-2010","2010-2039","2040-2069","2070-2099"),expand = c(.01,0))+  
 scale\_color\_manual(values = c("darkorange3","darkgoldenrod3","navyblue","skyblue4"), name="Scenario")+  
 theme\_bw()

