

## 15. pielikums

### R skripts augu zaļās masas noteikšanas RGB rastra attēlā

```
library(raster)
library(icesTAF)
library(SparkR)
convert2GLF <- function(photo_filename)
{
  foto_st <- stack(photo_filename)
  foto_br <- brick(foto_st)

  #Green leaf index
  #https://www.indexdatabase.de/db/i-single.php?id=375
  GLF <- (2 * foto_br[[2]] - foto_br[[1]] - foto_br[[3]]) / (2 * foto_br[[2]] + foto_br[[1]] +
foto_br[[3]])
  #Treshold for green
  GLF_TH <- as.integer(GLF[[1]] > 0.16)
  #Filtering noise, using focal function with default sum, because it is faster (gf - Gaussian filter
object)
  gf <- focalWeight(GLF_TH, 5, "Gauss")
  #focal - filtering function
  GLF_GF <- focal(GLF_TH, w=gf)
  #Removing transitions after Gaussian filter
  GLF_GF <- as.integer(GLF_GF[[1]] > 0.8)
  #remove NA values on edges of raster after focal filtering
  GLF_GF[is.na(GLF_GF)] <- 0

  f <- freq(GLF_GF)[2,][[2]]
  dataf <- data.frame(basename(photo_filename),f)
  mkdir(paste(dirname(photo_filename), "/Processed", sep=""))
  photo_filename <- paste(dirname(photo_filename), "/Processed/",
strsplit(basename(photo_filename),"[.]")[[1]][1], "_GLF.png", sep="")
  write.table(dataf, file = paste(dirname(photo_filename), "/data.txt", sep=""), row.names = FALSE,
col.names=FALSE, append=TRUE)

  png(filename=photo_filename, width=ncol(GLF_GF), height=nrow(GLF_GF))
  plot(GLF_GF, axes = FALSE, box = FALSE)
  dev.off()
  rm(foto_st)
  rm(foto_br)
  rm(GLF)
  rm(GLF_TH)
  rm(gf)
  rm(GLF_GF)
}
```