

Silva edges error

Ben Weinstein

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```
library(lidR)
```

```
## Loading required package: magrittr
```

Read in data

```
LASfile <- system.file("extdata", "MixedConifer.laz", package="lidR")  
las = readLAS(LASfile, select = "xyz", filter = "-drop_z_below 0")  
col = pastel.colors(200)
```

Compute canopy model

```
chm = grid_canopy(las, res = 0.5, subcircle = 0.3)  
chm = as.raster(chm)  
kernel = matrix(1,3,3)  
chm = raster::focal(chm, w = kernel, fun = mean, na.rm = TRUE)
```

Perform segmentation

```
ttops = lidR::tree_detection(chm, 5, 2)  
crowns<-lidR::lastrees_silva(las, chm, ttops, max_cr_factor = 0.6, exclusion = 0.6,  
                             extra = T)
```

Get convex hulls

These comes from a package/analysis i'm working on.

```
get_convex_hulls<-function(tile,ID){  
  split_trees= split(tile@data, ID)  
  tree_polygons<-lapply(split_trees,convex_hull)  
  
  names(tree_polygons)<-NULL  
  
  #assign treeID as slot ID for each polygon  
  for(x in 1:length(tree_polygons)){  
    tree_polygons[[x]]@polygons[[1]]@ID<-names(split_trees)[x]  
  }  
  
  #bind into large SpatialPolygonsDataframe
```

```

convex_polygons<-do.call(raster::bind,unlist(tree_polygons))

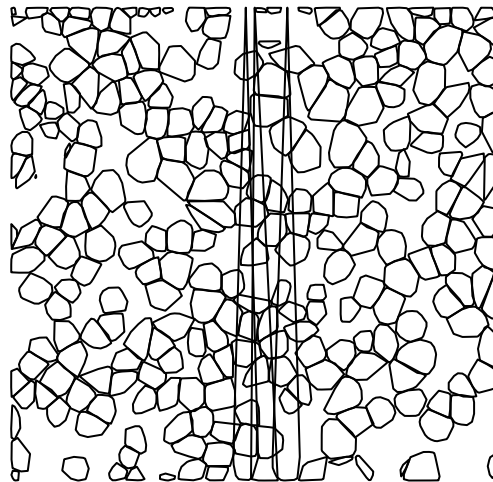
#make into sp dataframe
IDs <- sapply(slot(convex_polygons, "polygons"), function(x) slot(x, "ID"))
df <- data.frame(ID=1:length(IDs), row.names=IDs)
result<-sp::SpatialPolygonsDataFrame(convex_polygons,df)
sp::proj4string(result)<-tile@crs
return(result)
}

convex_hull<-function(x,plot=FALSE){
  ch<-grDevices::chull(x$x,x$y)
  poly_coords<-x[c(ch,ch[1]),c("X","Y")]
  sp_poly <- sp::SpatialPolygons(list(sp::Polygons(list(sp::Polygon(poly_coords)), ID=1)))
  return(sp_poly)
  if(plot){
    plot(sp_poly)
    points(cbind(x$x,x$y))
  }
}

silva_convex<-get_convex_hulls(tile = las,ID = las@data$treeID)

#view convex hulls
raster::plot(silva_convex)

```



Find strange polygons

The largest ones should be them.

```
areaF<-c()
for(x in 1:length(silva_convex)){
  areaF[x]<-silva_convex@polygons[[x]]@area
}

which.max(areaF)

## [1] 254
```

Confirm that's a weird polygon

```
raster::plot(silva_convex[254,])
```



Is that confusion in the original tile or just an artifact of the convex hull?

```
split_trees= split(las@data, las@data$treeID)
original_data<-split_trees[[254]]
```

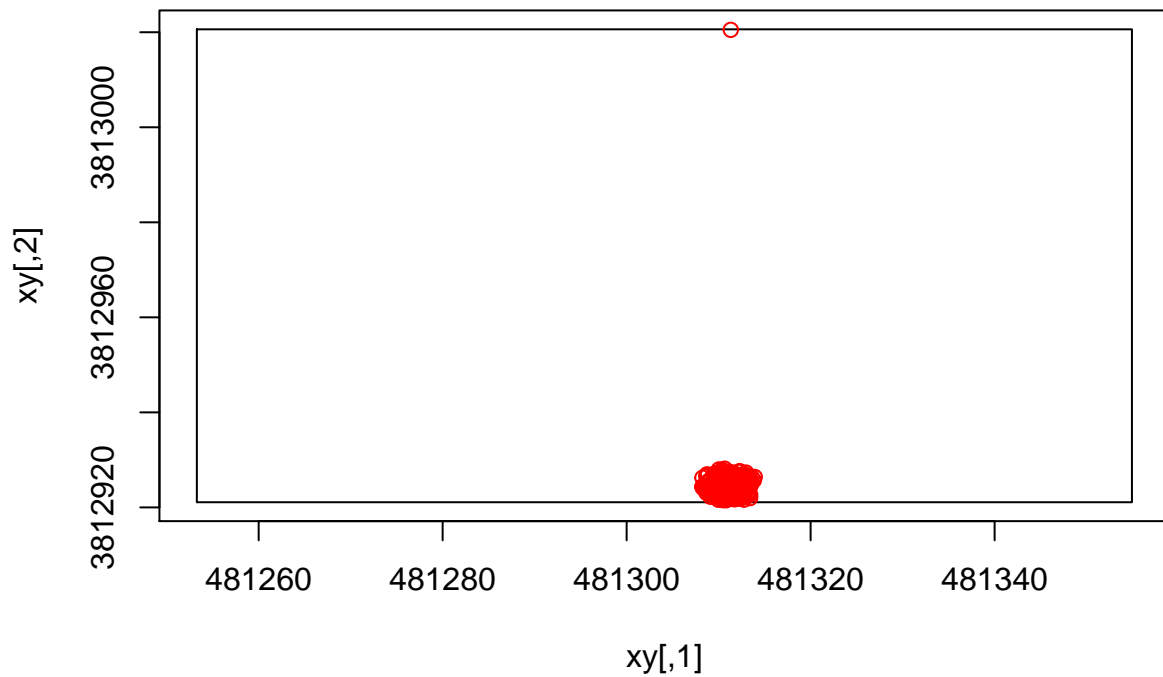
```

#Make sure that's the treeID
unique(original_data$treeID)

## [1] 254

#find those points in the las
bad_points<-las%>% lasfilter(treeID==254)
raster::plot(extent(las))
points(cbind(bad_points@data$X,bad_points@data$Y),col='red')

```



Its in the original segmentation. Those points all have the same treeID.